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STANDARDS OF FITNESS FOR HABITATION

WHAT a mess public authority gets into when it departs from the simple function of government. We are not referring to the sending of the innocents abroad to buy Argentine beef. We are concerned with something of much greater importance to the building industry.

In the good old days before the war of 1914-18, the function of public authority in the matter of housing was to ensure a standard of fitness sufficiently high to render all houses habitable. As only about 1 per cent. of the houses was owned by public authority this meant that the local authorities' housing officials could put the screw on the owner of unfit property and have it rendered fit without any cost to the public purse. Failure on the part of the owner would result in certain steps being taken, the most drastic of which was demolition. The fact that there were unfit and insanitary houses in those days is a reflection upon the slovenly manner in which public authority exercised its ample powers.

Things are not quite so simple to-day. Local authorities are the owners of about 11½ per cent. of the total number of houses in the country, and as they are building or commencing to build new houses at the rate of 4 for every 1 erected for a private owner-occupier this percentage will increase. The Government is also the sole buyer of certain building materials. Be it cause or effect, these materials are scarce, and the Government's housing target is restricted because of these shortages. Meantime, what is happening about the more normal functions of the housing authorities ?

A Sub-Committee of the Central Housing Advisory Committee under the Chairmanship of Sir Miles Mitchell has just submitted to the Minister of Health a report on "Standards of Fitness for Habitation."* According to this Sub-Committee the dwelling should :—

(i) be in all respects dry ;
(ii) be in a good state of repair ;
(iii) have each room properly lighted and ventilated ;
(iv) have an adequate supply of wholesome water laid on for all purposes inside the dwelling ;
(v) be provided with efficient and adequate means of supplying hot water for domestic purposes ;
(vi) have an internal or otherwise readily accessible water-closet ;
(vii) have a fixed bath, preferably in a separate room ;
(viii) be provided with a sink or sinks and with suitable arrangements for the disposal of waste water ;
(ix) be provided with facilities for domestic washing, including a copper, preferably in a separate room ;
(x) have a proper drainage system ;
(xi) be provided with adequate points for artificial lighting in each room ;
(xii) be provided with adequate facilities for heating each habitable room ;
(xiii) have satisfactory facilities for preparing and cooking food ;
(xiv) have a well-ventilated larder or food store ;
(xv) have proper provision for the storage of fuel ;
(xvi) have a satisfactory surfaced path to outbuildings and convenient access from a street to the back door.

The Sub-Committee appreciate, however, that it may not be practicable for all the requirements listed to be attained. They therefore recommend that there should be a revised penal standard based upon the Ministry of Health standard of 1919. This standard is well known and local authorities have been accustomed to work to it for many years. The Sub-Committee think that the time has now come when the standard instead of being merely a standard for guidance should be prescribed by law as a minimum. They therefore recommend that Section 188(4) of the Housing Act, 1936, should be repealed and be replaced by a clause somewhat to the following effect :—

For the purposes of this Act a house shall be regarded as unfit for human habitation if it is not
(i) free from serious dampness ;
(ii) satisfactorily lighted and ventilated ;
(iii) properly drained and provided with adequate sanitary conveniences and with a sink and suitable arrangements for the disposal of waste water ;
(iv) in good general repair ;
and has not
(v) a satisfactory water supply ;
(vi) adequate washing accommodation ;
(vii) adequate facilities for preparing and cooking food
(viii) a well-ventilated food store.

All very well, and the Minister is in general agreement with the recommendations made by this Sub-Committee. He would no doubt like to see such standards made effective at the earliest possible moment. But because of the need to concentrate on the erection of new houses for families without a separate home of their own it will not be practicable to require the execution of works to existing houses because of the substantial calls which would thus be made upon the restricted resources of labour and materials. In a circular letter to housing authorities† the Ministry state : "It would therefore not be appropriate to introduce at the present time legislation to put on a statutory basis the recommendation of the Committee in regard to minimum standards of fitness, since practical effect could not be given to it under present conditions. This recommendation will, however, be sympathetically considered when further housing legislation is introduced. In the meantime the Minister is confident that the report will be of interest and assistance to Local Authorities in considering standards the Government have it in mind to seek when it becomes possible to begin a campaign for the demolition of houses which cannot be made fit and for the improvement of houses which are capable of being made fit."

We sympathise with the Minister in his quandary. It is the old problem of supply and demand. The demand for new houses and for building work in repairs and maintenance of all kinds is to-day greatly in excess of the available supply of labour and materials. All the more need therefore that these scarce commodities should be husbanded and that our resources should be increased to the greatest possible extent.

Normally supply responds to demand. The production capacity of the industries manufacturing building materials increased very rapidly during the 1930's. That was in response to the great demand by private enterprise who were then building around 250,000 houses per annum. This was the period when building costs were reduced to a minimum. To-day building costs are well over 100 per cent. up on the costs ruling at that time, and they are continuing to rise. The problem of increasing the production per man-week must be faced, and the proven answer to this problem is bonus-on-output. Whatever difficulties

* H.M. Stationery Office : 2d.

† 61/47 of March 27, 1947.

there may be in applying bonus-on-output to contract work—and we fully realise that there are many such difficulties—these are not met with in the private enterprise house-building industry. The specialised house-building industry normally builds for the owner-occupier and the Government believe that the claims of this class of the community are not so urgent as those who must rent their houses from local authorities.

The Ministry of Health a year ago devised ways and means (which are described in Circular Letter 92/46 Appendix "B") which would enable the vast productive capacity of the house-building industry to be brought to the aid of the local authorities. Why has greater use not been made of the procedure described in this circular? And why have the local authorities when they have invoked the aid of this circular so altered its intention as to impose upon the building industry the very shackles which the circular letter was designed to knock off? We believe that the problems of production and costs are largely wrapped up with the more progressive machinery for carrying out building works for local authorities which this circular envisaged.

NOTES AND NEWS

Foreign Architects and the Register.

AT ITS MEETING on March 21, the Architects' Registration Council decided to submit for Privy Council approval an amendment to Regulation 26, relating to admission to the Register, which in effect makes a person eligible for registration under the principal Act if his application is (1) supported by a resolution passed by the Council of one of the bodies referred to in paragraph 1, sub-paragraphs (i) to (v) of the First Schedule of the principal Act or by all the elected representatives referred to in sub-paragraph (vii); and, (2), is recommended for acceptance at a meeting of the Admission Committee at which not fewer than 15 members are present; provided that not more than two members vote against the application or abstain from voting. This amendment would take effect as from January 1 next.

The purpose of this regulation is to secure that only those persons are admitted in future, otherwise than by examination, who it is generally agreed should be admitted. It would cover British architects who have been practising overseas either in foreign countries or in the Dominions, and also foreign architects. An interim plan for the consideration of foreign architects before that date was approved.

Chief Architect for Scotland.

THE appointment is announced of Mr. R. J. Gardner-Medwin, B.Arch., A.R.I.B.A., A.M.T.P.I., as Chief Architect and Planning Officer to the Department of Health for Scotland in succession to Mr. R. H. Matthew, A.R.I.B.A., now Architect to the L.C.C. Mr. Gardner-Medwin, who is 39 years of age, graduated at the School of Architecture, Liverpool University, and subsequently spent two years at Harvard University, U.S.A. After several years in private practice, he served with the Royal Engineers from 1940 to 1943, when he was released to become Town Planning and Housing Adviser to the British West Indian Governments. He is now returning to this country to take up his new appointment in Edinburgh.

The Department of Health for Scotland also announce the appointment of Mr. John Patterson, Dip.Arch. (Edin.), A.R.I.B.A., as their Deputy Chief Architect.

Covent Garden Opera House Centenary.

ON SUNDAY last Covent Garden reached its centenary as a home of opera, having been opened on April 6, 1847, with Rossini's "Semiramide." An earlier theatre on the site had been burnt down in 1808 and a new structure designed by Robert Smirke for J. P. Kemble. The 1847 interior, illustrated on this page, was a reconstruction of Smirke's work by Mr. Albano, completed in the short space of four months and incorporating some novel constructional features. The theatre was designed to accommodate 2,255, and special attention was given to heating, ventilation and fire precautions, *The Builder* account stating: "For the extinguishing of fire, should that occur, mains, supplied from cisterns in the upper part of the house, are provided, with cocks and hose on each tier." Unfortunately, the precautions were of no avail, for the theatre was burnt out in 1856, paving the way for E. M. Barry's building, opened in 1858, the building to-day being substantially the same.

Students' Designs at the A.A.

AN exhibition of students' work covering the first to the fifth years was on view at the Architectural Association recently. The standard of the work, which included a multiplicity of subjects, all tackled in a practical manner, showed a great improvement on that of previous years, due, no doubt, to the process of post-war recovery, which has included the appointment of new masters, some of whom were

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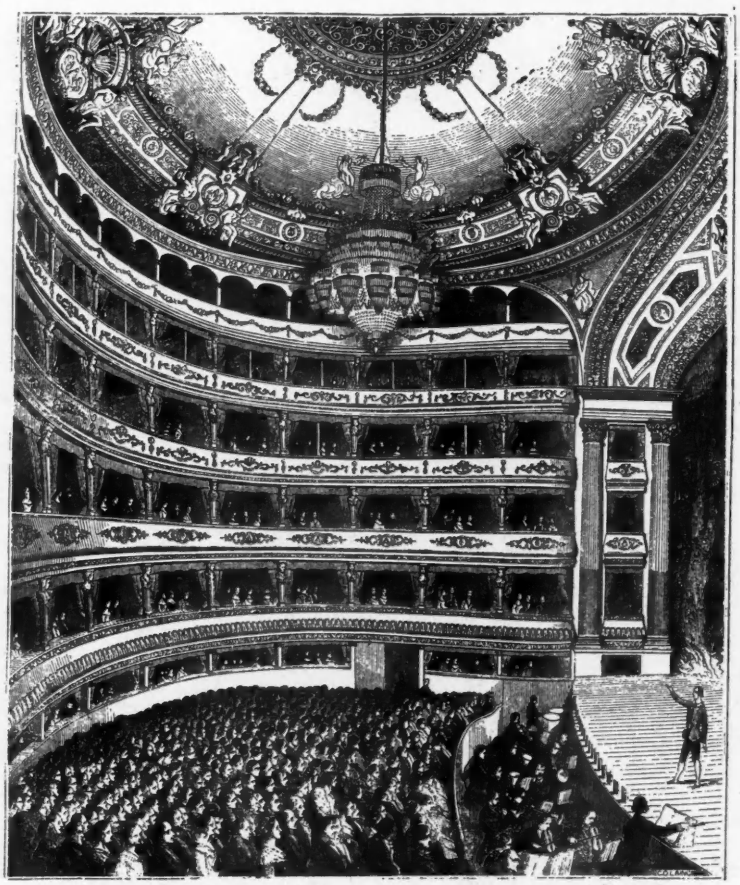
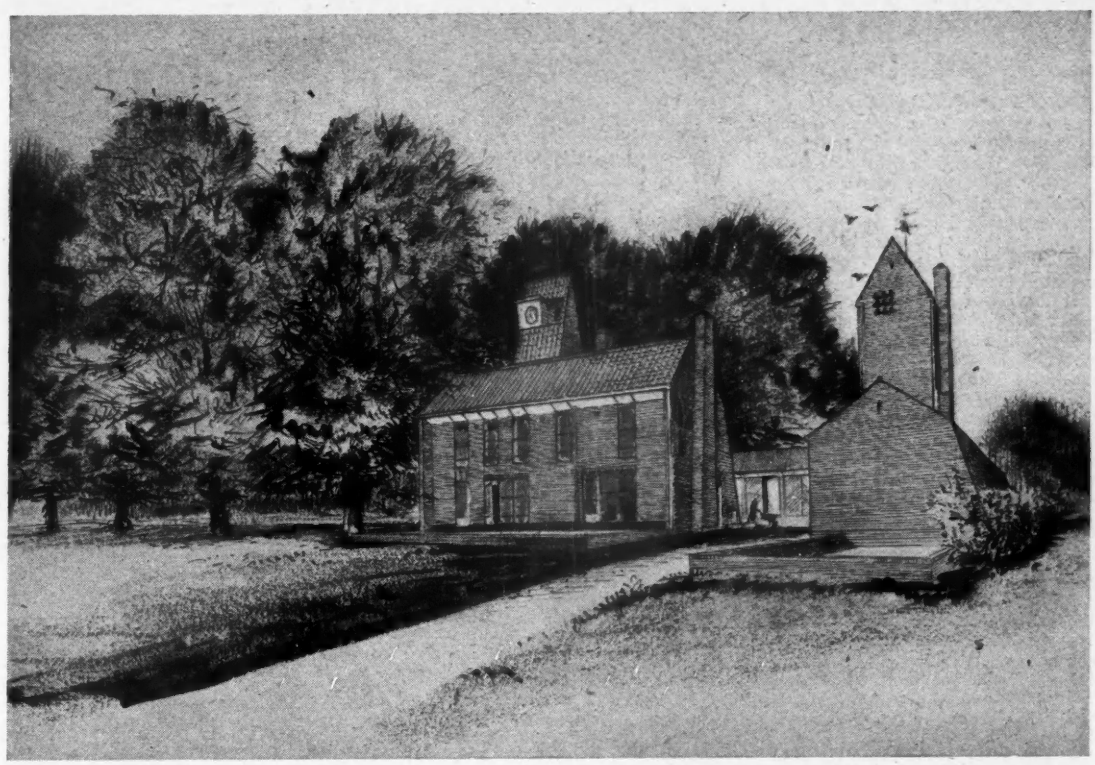


From *The Builder* of April 10, 1847.

COVENT GARDEN OPERA HOUSE. Albano's Interior of 1847. (See Note.)



A MARKET GARDEN, TEWIN, HERTS. By Patrick Horsbrugh (Third Year). (See note on A.A. School's Exhibition.)

present on the occasion of our visit, and explained the methods of procedure and teaching at the A.A.

A First Year third-term subject was "A Stage Set"—perhaps a new departure. A capital scheme for the play "The Farmer's Wife" was a kitchen interior shown in a good drawing by Oliver Heywood; it had the character and atmosphere of a Devon farm kitchen. Open-air recordings of buildings of architectural interest are also a good practical way of obtaining informative detail.

In the Second Year "The Throne of God" was a clever and highly imaginative scheme by Steven Macfarlane. In the Third Year a design for "Market Garden Premises" by Patrick Horsbrugh had good composition and was grouped well. A Fourth-Year subject was "Reconstruction of the Temple," a well-considered scheme by Michael Ventris, being shown by numerous drawings and constructional details. In Fifth Year we noted a design by L. E. Martin for "An Anglican Church." In the "modern" style, it had dignity and impressiveness, devoid of extravagance or oddity. Some good models were on show, the Banqueting Hall, by A. S. Hunt, being an excellent example.

Leicester's Chief Architect.

MR. F. A. C. MAUNDER, F.R.I.B.A., has been appointed Chief Architect at Leicester at a commencing salary of £1,500. Mr. Maunder was the Chief Planning Officer and Reconstruction Architect under the Portsmouth City Council from 1941 to 1946, and for the last year or so has been Chief Architect to the Buckinghamshire County Council.

The "Cast-Rendered" House.

IN CONNECTION with the illustrated article on the above subject published in our last issue, it should have been stated that the method shown has been developed jointly by Mr. R. A. Yearsley, as architect, and Mr. W. H. Webb, A.M.Inst.C.E. as engineer. We regret the accidental omission of Mr. Webb's name.

Professional Announcements.

MR. J. STANLEY BEARD, J.P., F.R.I.B.A., founder and senior partner for 37 years of the firm of J. Stanley Beard and Bennett, of 101-3, Baker-street, London, W.1, has retired, but will act as consulting architect to the firm in future. Mr. Walter R. Bennett, L.R.I.B.A., now senior partner, and Mr. A. J. Hale, L.R.I.B.A., have taken into partnership Mr. Ralph R. Wilkins, A.R.I.B.A., A.A. Hons. Dip. In future the practice will be carried on under the title of J. Stanley Beard, Bennett and Partners, at the same address. Telephone: Welbeck 2858 (5 lines).

MR. D. MACFARLANE DOIG, F.S.I., having resigned from the Civil Engineer-in-Chief's Department of the Admiralty, has reopened his practice as chartered quantity surveyor at 164, Bath-street, Glasgow, C.2 (telephone: Douglas 6265).

MR. A. D. MASON, P.A.S.I., chartered quantity surveyor, of 36, Camomile-street, London, E.C.3, has taken into partnership Mr. Harold Selby, P.A.S.I. The firm is now known as Mason and Selby and the practice will be continued at the same address.

BY mutual arrangement, as and from March 1, MR. H. PLACE, P.A.S.I., has resigned his partnership and interests in the firm of Garland & Place, architects and surveyors, 47, Hamlet-court, Hammersmith, W.6, also at 82, Bromwich-street, Bolton, Lancs, and the practice will continue under the same title as hitherto from the London office only under the supervision of MR. T. C. GARLAND, L.M.I.A.A., M.Inst.R.A., corporate and registered architect and surveyor. Telephone (Riverside 6488) remains unchanged.

COMING EVENTS

Monday, April 14.

ROYAL INSTITUTION OF CHARTERED SURVEYORS. JUNIOR ORGANISATION. Mock appeal before War Damage Tribunal. R.I.C.S., 12, Great George-street, S.W.1. 6 p.m.

Tuesday, April 15.

HOUSING CENTRE. Mr. R. T. Kennedy, A.R.I.B.A., A.M.T.P.I., on "Orientation and Natural Lighting." 13, Suffolk-street, S.W.1. 1.15 p.m.

Wednesday, April 16.

WATFORD CORPORATION. Housing Exhibition. Town Hall. 2.30 p.m. (continuing until April 19).

ROYAL SOCIETY OF ARTS. The Rt. Hon. Oliver Lyttelton, D.S.O., M.C., M.P., on "Production." R.S.A., John Adam-street, Adelphi, W.C.1. 5 p.m.

THE ARCHITECTURAL ASSOCIATION. Mr. John Summerson, B.A., A.R.I.B.A., F.S.A., on "How we began—the early history of the A.A." A.A., Bedford-square, London, W.C.1. 7.45 p.m.

Thursday, April 17.

TOWN AND COUNTRY PLANNING ASSOCIATION. Messrs. E. Antrobus, Edward Fryer and A. J. Lyddon, C.B.E., on "Planning London's Traffic." 28, King-street, W.C.2. 1.15 p.m.

TOWN PLANNING INSTITUTE. Mr. P. W. McFarlane, P.A.S.I., A.M.T.P.I., on "Planning for Industry." Livingstone Hall, Broadway, S.W.1. 5.30 p.m.

From *The Builder* of 1847

Saturday, April 10, 1847.

THE PROFESSION OF ARCHITECT.—The right course of education has yet to be prescribed for the united profession, although it has been attempted in one branch. . . . It is not, therefore, merely that there is no course, collegiate or otherwise, prescribed as a preparation for the profession . . . but that nothing that can deserve the name of a system has ever been suggested. . . . The object of all education should be to make the mind an index to all knowledge rather than to attempt completion in a few things. For all professions that education would be best which might perhaps be styled "superficial," and it will require the full amount of exertion to attain even that. Thus, drawing should be mastered in all its departments; facility in expressing the ideas should be held one of the *tools* of the art, indispensable as compass and rule, rather than an accomplishment in which skill could necessarily be obtained only by a *few*. Mechanics and natural philosophy, chemistry, geology and mathematics are of more moment to the architectural student than is the perfect knowledge of every characteristic of some one style of architecture.

EXETER CATHEDRAL

RESTORING THE ANCIENT WOODWORK

By Herbert Read, F.S.A.

A few minutes after Great Peter had struck the hour of two one morning in May, 1942, a bomb fell on the ancient cathedral at Exeter. It came down and exploded in St. James's Chapel on the south side of the south quire aisle, hurling hundreds of tons of masonry, etc., in every direction inside the cathedral, which, together with the blast, caused untold havoc, and a sad spectacle of devastation met the eye in every direction. No words can adequately describe the scene. The debris was piled mountains high in the quire and the quire aisles. Stonework of walls, roof and windows, glass, chairs, hassocks, ancient oak and stone screens, stalls, their canopies, organ pipes, monuments, and innumerable ancient documents, and last, but not least, the dust—all lay piled in utter confusion.

The writer started at once on what at first seemed a hopeless task, sorting and salvaging every detail. Knowing the Cathedral so well, I was able to identify every fragment, but what mostly concerned me were the lovely oak screens of the early fifteenth century which had all left their places and had been crushed and scattered in every direction. Many fragments actually went through the windows, and I picked them up far away on the green outside. Not a sill, post, beam, traceried panel or cresting remained intact, and nothing of them could be seen, for almost all the delicate work was buried beneath the debris. However, in excavating, as I came across the fragments, I allocated them and placed those belonging to each screen in separate heaps. I have heard recently that many who saw me grovelling amidst the debris and dust in my search for the tiny fragments, looked on with pitying eye, often making remarks to the effect that none of it would ever be put together again, that what I was doing was useless, but that at all events it was doing no one any harm!

The great majority of pieces were very small, some quite infinitesimal, whereas some were so large that it took two of us to lift them. Fortunately I was able to visualise the screens, and in consequence, could differentiate between one fragment and another, thus definitely establishing not only to which screen they belonged but what part of the particular screen. I have recently completed the putting together and re-erection of one screen, and am now starting on two more, and I consider that, as a moderate estimate, there are at least ten thousand fragments in these two screens.

The method I adopt is this: Having accumulated the heap of pieces belonging to a certain screen, I begin by sorting out the different parts of it—the bits of posts in one heap, the transomes in another, the head and cornices in another, the great traceried heads in another, the front carved panels below the transome in another, and the similar panels of the back in another, the mullions in another, and so on, with each detail. Then I deal with each item. Take, for instance, the posts. I know there should be, say, five of these in the screen; so begin by laying out the fragments on the floor and gradually finding the exact place of all the pieces, tying them together until I arrive at five complete posts. Some of these posts, by the way, are in 30 or 40 pieces. The next process is to clean the breaks thoroughly, and securely fasten piece to piece by glueing together under such pressure that the join is almost imperceptible, and then

RESTORING EXETER CATHEDRAL. Shown in this photograph are Mr. Herbert Read and the Dean of Exeter examining a detail in the screen at the entrance of St. Andrew's Chapel, which has been completely restored.

Mr. Herbert Read (standing) watches two assistants fitting together fragments of a screen for the restoration.

pinning with oak pins in dovetail fashion across the joint, thus making it as strong as when it first left the craftsman's hands. In the case of big fractures, such as that of a post broken across the middle, I insert an oak tenon in the centre of the break, varying in size and shape to suit the section of the pieces to be joined together, with a big pin through post and tenon at either end, thus securing and making it as strong as it ever was. The same process applies to the large perforated tracery heads of the screens, which were originally worked out of solid 3-in. planks; some of these were each in as many as a hundred pieces. Every fragment, no matter how small, is pinned with an oak pin varying in size to suit the size of the fragment to be secured. It is necessary to use some pins as large as three-quarters of an inch in diameter, and others as small as one-sixteenth of an inch. Several of these traceried panels have required somewhere in the region of 200 pins. Not a nail or screw, or, indeed, any metal, is being used.

Where some of the pieces are so splintered that they cannot be secured by pinning, or where a piece here and there is missing entirely, we insert new oak, pinned in the same way and carefully worked down to connect with the ancient surroundings. Then when each portion of the screen is completed in this way, the small bits of new oak and the tops of the pins are toned to the same shade of colour as the old oak, after which none would detect that anything had ever happened to it.

The final assembling and re-erecting of the screen in its exactly original position is an ordinary and comparatively simple part of the undertaking. It is, however, a thrilling joy to see these lovely things resurrected, and to feel that they are being handed on to future generations in spite of Hitler's efforts to destroy them.

Allocating wooden fragments to piece together.

COMPETITION NEWS

Colombo Cathedral Competition.

News reaches us from Colombo that the winning design in the competition for a new Cathedral at Colombo for the Diocesan Council of the Church of Ceylon has been submitted by Messrs. R. A. P. Pinckney, F.R.I.B.A., and A. F. E. Gott, B.A. (Oxon), L.R.I.B.A., 7, Grays Inn-square, W.C.1.

The official award is expected within the next few days after which the 59 designs submitted will be exhibited publicly at the Imperial Institute. The winning design carries a premium of £500, and £200 and £100 will be awarded to the designs placed second and third.

Bessingby Housing Estate, Bridlington.

Bridlington T.C. invite architects to submit designs for the layout of a Housing Estate of 114 acres at Bessingby and for 250 houses of eight types, to be erected on part of the Estate. The assessor is Mr. C. W. C. Needham, F.S.A., F.R.I.B.A., M.T.P.I. Premiums of 100 guineas, 50 guineas, and 25 guineas are offered. The last day for submitting designs is July 14, and the last day for questions is May 14.

Conditions of the competition and survey plan may be obtained upon application to the Borough Engineer, Town Hall, Bridlington, upon payment of a deposit of £2 2s.

OBITUARY

T. R. Clemence, F.R.I.B.A.

The death took place on April 4 of Mr. Thomas Riley Clemence, F.R.I.B.A., of Quarry-street, Guildford. He was in his 84th year. Mr. Clemence received his architectural education at University College, London; the R.A. Schools; and the A.A., and was articled to Edward Augustus Gruning. He had been associated with Guildford for most of his professional life, and had won competitions for Guildford municipal offices and for a bridge over the River Wey in the town. His buildings include offices, restaurants and much domestic work in Guildford and Western Surrey, including Dennis Brothers' general offices.

J. T. Saunders, F.R.I.B.A.

We regret to record the death, on April 7, of Mr. John Thomas Saunders, F.R.I.B.A.., M.I.Struct.E., of 1a, Lindengardens, W.2.

M. I. H. Somake, F.R.I.B.A.

The death, in his 72nd year, is reported of Mr. Moses J. H. Somake, F.R.I.B.A., who had designed much work in Karachi, India, including the North Western Hotel, shipping offices for Mackinnon, Mackenzie and Co. (B.I. & P. & O.), the Khalikdina Hall and Library and the G. P. Association Hall and Club.

"TWENTY YEARS AFTER"

Le Corbusier's "Towards a New Architecture" Reassessed

A FACSIMILE edition of le Corbusier's "Towards a New Architecture," originally produced in this country in 1927, has been republished in a slightly reduced page size.* Owing to the process used and this reduction, the clearness of the photographs has suffered, but not to any serious degree; the printing is extremely clear.

As the photographs used are the same as in the original publication, the examples of machine production are out of date, the aeroplanes and cars illustrated in some cases dating back as far as 1907, but they do not appear in the least inappropriate. They were selected by the author to illustrate the clean lines which arise when machines are used sincerely. This aspect is timeless and the argument which the author wishes to make clear is perfectly demonstrated by these early models, although the examples themselves are obsolete.

The author sets out his arguments in a summarised form at the beginning of the book and later elaborates each of these arguments in detail. The style of his writing is forceful and his convictions are punched out in a series of short statements amplified by illustrations. This method of writing tempts the reader to dip into the book haphazardly. Wherever you open the book you are confronted with an absorbing and rounded statement, and, according to which page you happen to select, you can class the author as exceptionally practical or uncompromisingly idealistic. To get a true picture of the author and the message he sets out to give, it is essential to read the book as a whole.

There is a tendency to regard le Corbusier as a functionalist and an exponent of the theory that a thing is beautiful when it is fit for its purpose—a theory which he denies in the book under review. This is probably due to those of us who have drawn a one-sided conclusion from dipping into the original publication and have tended to overlook that his admiration for engineering and machines is only a means to architecture, and remembering such statements as "the house is a machine for living in" and forgetting "architecture goes beyond utilitarian needs."

Le Corbusier is a great champion of architecture, but an architecture which is based on the constructional methods and needs of the day. He believes passionately in beauty, but believes that this can only be achieved in architecture if the practical aspects are first correct.

The Practical Visionary.

It is worth while appreciating le Corbusier's approach from every angle. He is not only a visionary, but has practical suggestions as to what direction architecture can take under modern conditions, and this publication comes at a critical moment for architects in this respect.

Post-war circumstances have stimulated the use of mass production methods in building looked forward to so enthusiastically by le Corbusier. These new methods, however, require from the architect an absolutely new approach if he is to deal with the problem successfully, and for this reason the book is probably more topical now that it was twenty years ago. Then it was a prophecy; now that prophecy is becoming a reality.

* The Architectural Press. 15s.

Le Corbusier's contention that the problem must be stated clearly before results can be achieved, is particularly true at the moment.

Mass production in building has started, but the problems involved are not clearly understood by the architect, the producer or the public.

The Danger Ahead.

There is a danger facing us to-day that le Corbusier did not foresee when writing twenty years ago—that mass producers, who are realistic and free from tradition when making such things as aeroplanes and motor-cars, lose direction when dealing with houses and tend to produce building units based on out-of-date traditional conceptions and to use forms not in accord with mass-production methods. In these circumstances an understanding of le Corbusier's belief that new architectural forms can arise from the machine is essential, as these new forms can only arise if architects have a proper knowledge of mass-production methods and lead the way for the manufacturers.

There is, of course, a large field of building which will not be touched by mass production for some time, where more traditional methods will still be employed. Here le Corbusier's influence has already made itself felt, both through his work and his writings. It is largely through his influence that an increasing amount of architecture is being carried out both simple in character and more in accord with present constructional methods.

Because le Corbusier has stated his own problem clearly, his book is just as vital to-day as when originally written.

RODNEY THOMAS.

HOUSING IN TEL AVIV

HOUSING CENTRE TALK

AN interesting account of how the municipality of Tel Aviv has tackled the housing problem in that very rapidly-growing Palestine city during the last ten years was given by MR. M. N. ROITMAN, Deputy City Engineer, to a recent meeting of the Housing Centre, London.

The speaker said at the end of the war the housing need in Tel Aviv was estimated at 20,000, to meet natural increase of population and some relief of the most congested areas, without taking into consideration other needs, such as emigration or accommodation for demobilised soldiers. But when the war ended, the most urgent need was for accommodation for ex-Service men and homeless refugees. Here the municipalities and some other publicly-controlled housing organisations stepped into the breach.

The position of the building market when peace came was as follows: (1) Building materials: Quantities were still insufficient for full-scale building activities. Materials were released in limited quantities and their use restricted mainly to residential building. The situation gradually improved, and in September, 1946, materials were decontrolled, though even to-day there were still restrictions on the use of materials for non-residential purposes. (2) Labour: Although many labourers were released from the Army, the lack of skilled labour was still a main hindrance to building, and resulted in a great increase in the cost of labour, amounting sometimes to 75 per cent. of the total cost of building. Skilled workmen were often paid more than skilled engineers and architects. (3) Capital: The flow of private capital ready for investment in building stopped when the war started. Although there were still many wealthy people in Palestine, they were afraid to invest their money in building projects because of the difficulties and restrictions facing the industry.

German Estates.

Despite legal and financial difficulties, the Municipality of Tel Aviv decided to face the housing problem. After some hesitation, the Government granted the Municipality permission to expropriate some of the estates belonging to the former German colony. Capital was raised by public subscription, given by special public institutions, by the mortgage bank and partly by future tenants.

A municipally-controlled housing association was put in charge of the scheme, and work started. At the beginning of November last, 822 houses were in various stages of construction, many of them ready for occupation. A bridge and roads were under construction, water supply and an electricity network laid down and a completely new part of the city planned.

This housing scheme consisted of flats of 1, 1½, and 2 rooms, and terrace houses of 1½ and 3 rooms. The 1½-roomed flats had a large hall which might serve as sitting- or dining-room. The reason why flats of only 1½ and 2 rooms had been built was in order to erect as many units as possible. These were given mainly to aged people and young, still childless couples. This was a transitional period, and in future it would be possible to enlarge the units either by adding rooms in the case of houses or by connecting two adjoining flats and transforming them into flats of two or even three rooms. This could be done by removing the partition walls, which were only 12 to 20 centimetres thick.

Private buildings now cost 3½ times as much as they did before the war, in Tel Aviv, said Mr. Roitman. The following prices were ruling, per square metre:—1-room flat, £1 15s.; 1½-room flat, £2 10s.; 1½-room house, £1 14s. to £2; 2-room flats, £1 13s. to £1 16s.; 3-room houses, £1 12s. These prices were about 25 to 30 per cent. below those for private buildings. This was due mainly to the quantity of the Municipality's work and repetition of the same types of buildings, which enabled the contractors to reduce the cost of labour to 50 per cent. of the total cost. About £3 10s. per month was the normal rent for a 1-room flat.

THE ROYAL SANITARY INSTITUTE

Prize Competitions, 1947.

The Council of the Royal Sanitary Institute announce that prizes are offered during 1947 for the following competitions.

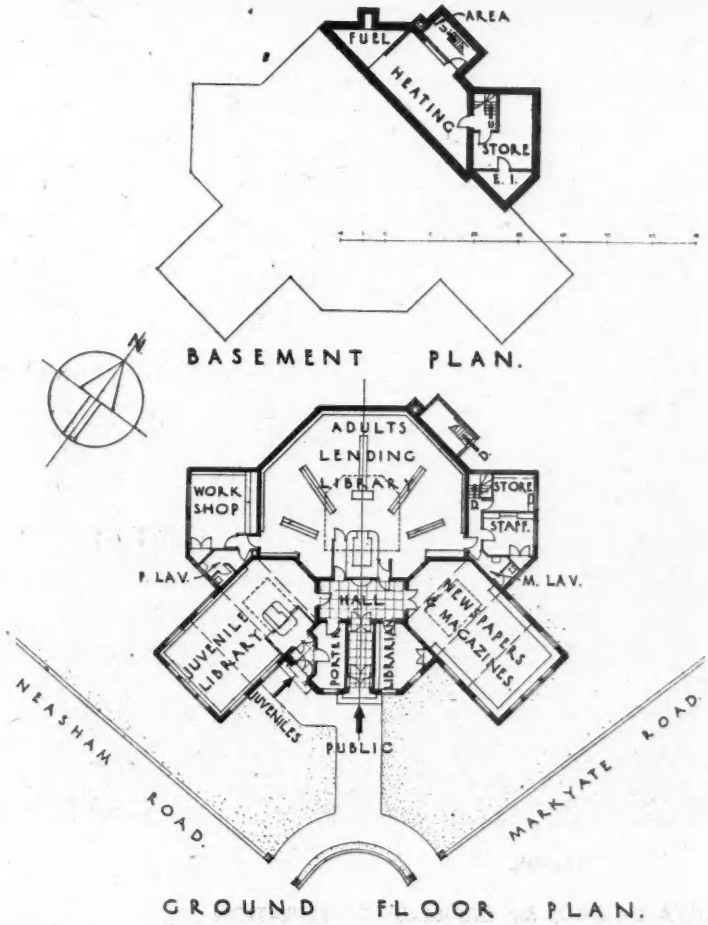
The John Edward Worth Prize.—For 1947 the Council have decided to award a prize of £40 for an essay on practical improvements of appliances or inventions used or proposed to be used in or about dwelling houses. Each essay can deal with one or more than one appliance or invention, at the discretion of the essayist.

The John S. Owens Prize.—Under the terms of this bequest the Council of the Institute has to endow an annual medal or prize for the best paper on the subject of atmospheric pollution or the ventilation of buildings and its effect upon human health, the funds being provided by the legacy left by the late John S. Owens (Fellow of the Institute).

The prize in 1947 will consist of £25, and is offered for an essay on either atmospheric pollution or on the ventilation of dwellings and its effect upon human health.

Further details may be obtained from Mr. J. W. Dudley Robinson, Secretary of the Institute, 90, Buckingham Palace-road, S.W.1.

View looking towards Entrance.



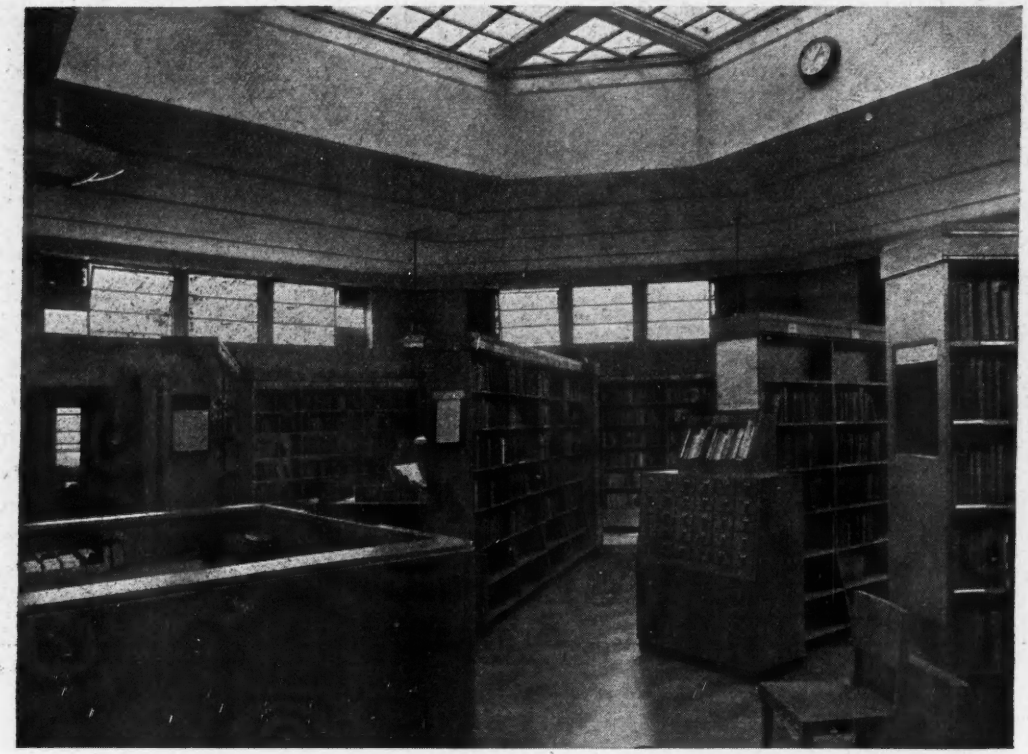
A LIBRARY

MARKYATE-ROAD

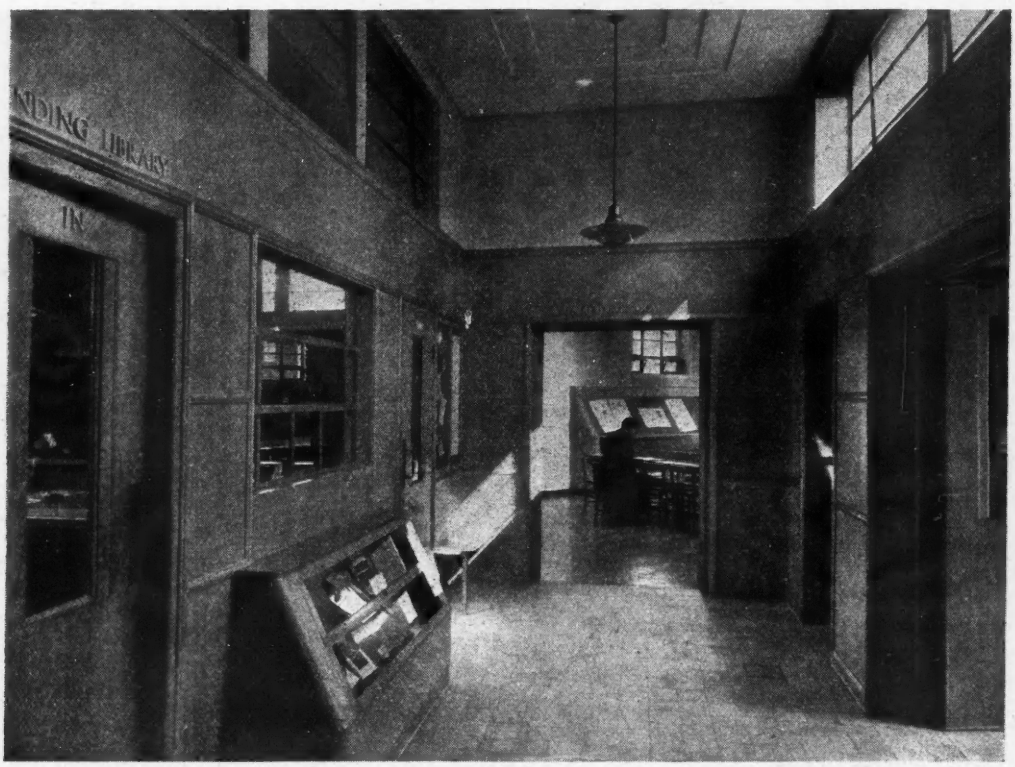
for BARKING T.C.

THIS LIBRARY, AT MARKYATE-ROAD, Barking, was completed for the Corporation in 1940. The Lending Library portion is steel-framed and the walls are brick, with stone dressings. The quantity surveyors were Messrs. Gardiner and Theobald, FF.S.I., and the main contractor was the Works Manager of Barking Corporation. Sub-contractors and suppliers were: Bricks, Roberts Adlard and Co., Ltd.; asphalt, the Neuchatel Asphalte Co., Ltd.; metal windows, the Crittall Manufacturing Co.; structural steelwork, Sanders and Forster, Ltd.; hollow-tile flooring, Attoc Blocks, Ltd.; heating, Comyn Ching and Co., Ltd.; sanitary fittings, the General Light Castings, Ltd.; roof lights, J. A. King and Co., Ltd.; furniture, Libraco, Ltd.; and seats, J. P. White and Sons, Ltd.

C. C. SHAW, B.Arch. (L'pool), F.R.I.B.A., Borough Architect

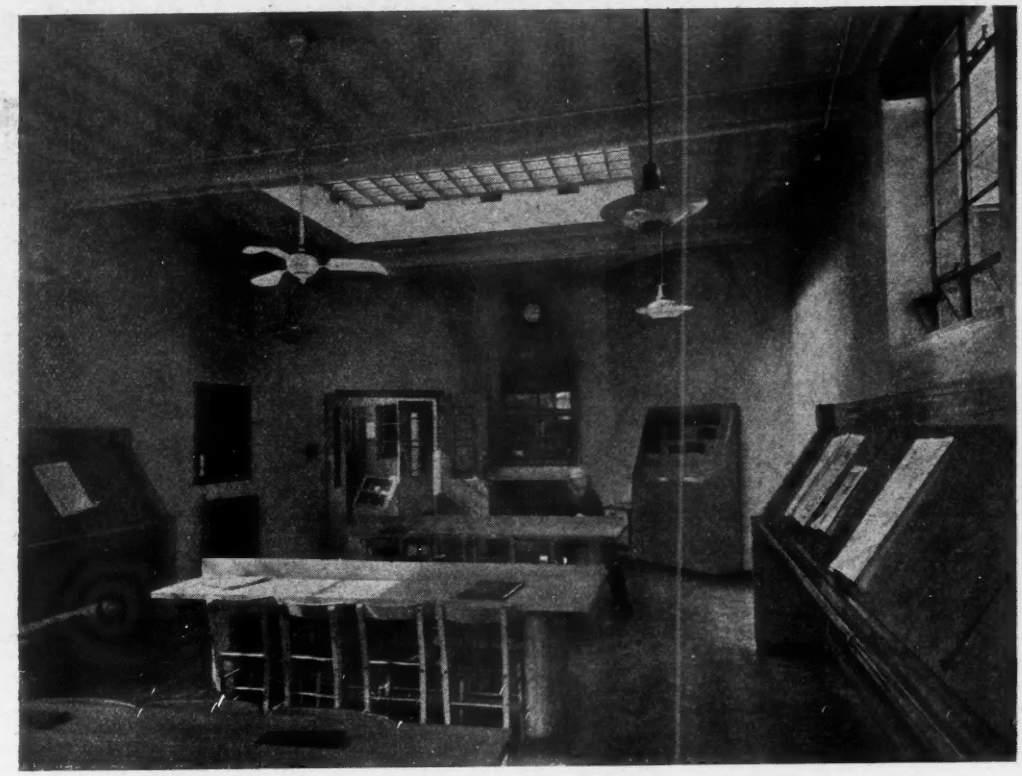


The Lending Library.



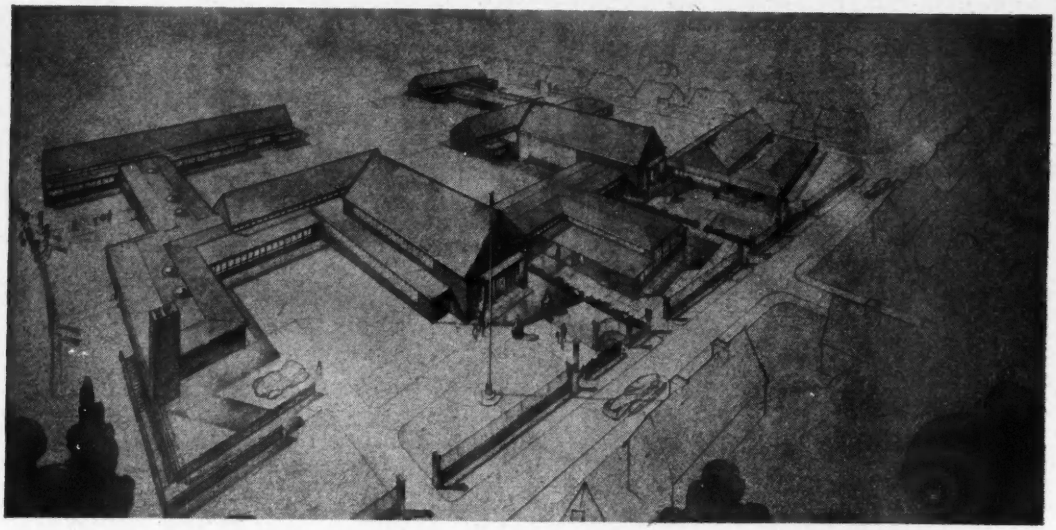
The Hall.

LIBRARY, MARKYATE-ROAD, for BARKING CORPORATION



Newspaper and Magazine Room. *Below*: The Juvenile Library.

LIBRARY, MARKYATE-ROAD, for BARKING CORPORATION



Perspective of the Scheme.

PRIMARY SCHOOLS GROUP, SOUTHMEAD, BRISTOL

J. NELSON MEREDITH, F.R.I.B.A., CITY ARCHITECT

THIS SCHOOL GROUP AT SOUTHMEAD, Bristol, has been designed to the requirements of the Ministry of Education and the Bristol Education Committee, to accommodate three hundred and twenty mixed junior children, two hundred and forty children in the infants' school and sixty of nursery standard, the two former schools being provided with classrooms of 600 ft. super and the latter block, two playrooms of 750 ft. super. Ninety per cent. of these children have been catered for in respect of meals and two dining-halls and an extensive kitchen have been provided for this purpose.

This scheme incorporates the standard method of construction originated by Messrs. Gardiner, Sons and Co., Ltd., of Bristol, in association with the Cementation Co., Ltd., of London, and named the "Thermagard" system.

SITE: The site is located in the heart of the Southmead Housing Estate and has a slope down of 20 ft. across the site from north to south. The school is to be laid out in the northern half with all classrooms facing south and looking out across playing fields.

PLAN: The plan shows, in fact, a group of three schools, each of which is provided with an assembly hall and dining-room, the latter being served by an extensive kitchen common to all schools. Each school is also equipped with medical inspection rooms, staff and administration section.

GENERAL PLANNING: A modulus of 8 ft. 3 in. has been adopted in plan throughout the whole of the construction, the classrooms being of three units in width and the assembly halls of four units; in most cases the administration sections or lavatories and corridors are included in a three-unit span.

FRAMEWORK: The whole of the structure has been designed in accordance with British Standard Specification No. 499; stanchions of welded construction are drilled to suit the various heights of windows which are used, and encased with expanded metal grounds for taking ¾-in. plaster.

ROOF CONSTRUCTION: Is of three types 40 deg. pitched, (1) trussed roofs insulated with Thermacoust, a woodwool slab incorporated in the Thermagard system and covered with clay on concrete tiles, to roof the classrooms and halls; (2) a semi-flat welded girder similarly insulated and finished with asphalt, to roof the staff and administration sections; and (3) A flat roof insulated and covered as before, over all outside corridors.

WALLS: External—cavity construction consisting of 4½-in. brickwork outer leaf and 2-in. Thermacoust woodwool inner leaf. Internal—3-in. Thermacoust slabs and 4½-in. brickwork.

SUSPENDED CEILINGS: Of 1-in. Thermacoust slabs carried in light gauge sherardised steel tees.

The originators of the system supply the following notes:—

It is generally agreed that a measure of standardisation is advantageous, if not essential, to the successful solution of any problem involving large quantities, little time and limited resources in the way of man-power and materials. Numerous examples from war-time production come to mind, such as the Bailey Bridge and the Jerrican, to name only two of the most widely known. It is not always realised, however, that while complete standardisation is desirable in cases where the purpose of the article is purely functional, it can also be adopted as a basic principle in cases where it would be undesirable to sacrifice individuality.

How far, and in what units, to standardise, are problems involving the careful consideration of many factors, some conflicting, some complementary.

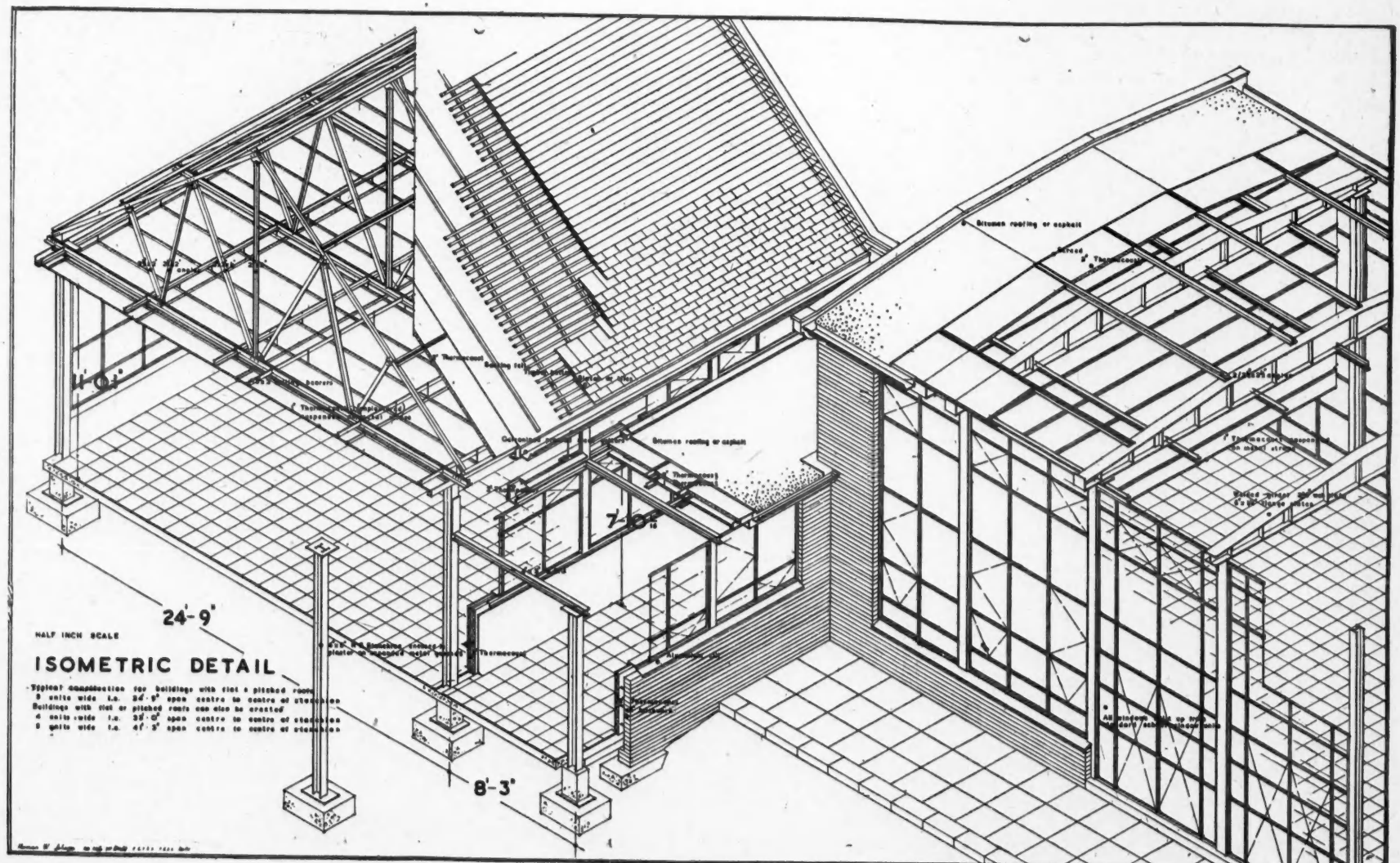
The designers of the Thermagard system of construction, taking their lead from Post-War Building Study No. 2—"Standard Construction for Schools"—believe that the use of a standard steel framework offers the opportunity of making the most of the benefits of standardisation, while, at the same time, leaving the architect a considerable measure of freedom, both in planning and in the use of alternative materials for cladding the structure.

It is recognised that standardisation, involving as it must the use of a common modulus for the different-sized buildings required in a school, must inevitably lead to some divergence from the sizes recommended for different rooms in the Ministry of Education's Building Regulations. These sizes are, however, intended to be minimum sizes, and the fact that they are in some cases exceeded does not represent unnecessary expense if the small increase in quantities of materials is compensated for by the overall saving in production costs effected by standardisation.

In considering the choice of the best modulus for a system of construction which deliberately invites the use of alternative cladding materials, it will easily be appreciated that the relation of this modulus to the dimensions of the various building materials is of little importance. While, therefore, the modulus should be such as to suit as closely as possible the different sizes of rooms required, its ultimate choice will depend on some factor common to all the buildings, irrespective of the cladding materials used in any particular instance.

The standardisation of school windows was an accomplished fact before the advantages of standardising the whole construction were seriously contemplated, and since the same basic sizes of windows can be used throughout the buildings, the correct relation of the modulus to the window sizes becomes of paramount importance.

After exhaustive experiments with various sizes and special forms of members for the stanchions, it was found that sections having a flange width of 5 in. would be most practical. This, in conjunction with



PRIMARY SCHOOLS GROUP, SOUTHMEAD, BRISTOL. Isometric Detail of "Thermagard" Construction.

the standard window sizes, leads to an appropriate bay-width, being 8 ft. 3 in., and this has been adopted for the plan modulus throughout. The use of the same modulus for the vertical dimensions, while at first sight appearing logical, was, however, soon found to be unpractical. Any serious increase on the recommended height of 11 ft. for classrooms would be extravagant, and as far as single-storey schools are concerned, no obvious relationship exists between the heights of the different rooms and corridors comprising the whole. The roof pitch settled upon is 40 degrees.

The designers wish to make it clear that on no account is it intended to dispense with the services of the local contractor. After preliminary plans for a complete new school or for extensions to an existing one have been prepared by the architect concerned, the designers will be pleased to get out a target figure for the cost using the system, for comparison with that based on orthodox methods of building, or on any other form of construction giving comparable standards of amenities and durability. For this purpose complete schedules for the various roof and wall units are prepared, covering not only those items for the supply of which the designers are responsible, namely, the steel framework, windows and sills, roof and wall slabs and suspended ceilings, but also including the brickwork and other builders' items, for which basic rates are suggested which can easily be modified, where necessary, to suit local conditions.

Alternatively, for those architects who prefer their own quantity surveyor to prepare the target figure, separate prices for the various Thermagard components are available.

Specification.

General Planning.—A modulus of 8 ft. 3 in. has been adopted in plan throughout the whole of the construction. Buildings 3, 4 and 5 units in width are available, and the width for external corridors is one unit.

Framework.—The whole of the structure has been designed in accordance with British Standard Specification No. 499.

All members are built up and drilled to jigs, this ensuring accuracy in the construction and interchangeability if necessary.

Stanchions of welded construction are drilled to suit the various heights of windows and sills which may be used, and are supplied with the expanded metal grounds and fixings for encasing the stanchions in plaster.

Trusses for 40 deg. pitch roofs are of bolted construction. Flat-roof girders are of welded construction throughout.

External Walls.—Cavity construction consisting of 4½-in. brickwork outer leaf and "Thermacoust" inner leaf, giving unusually high thermal insulation. Special ties for securing the brick outer leaf to stanchions will be supplied.

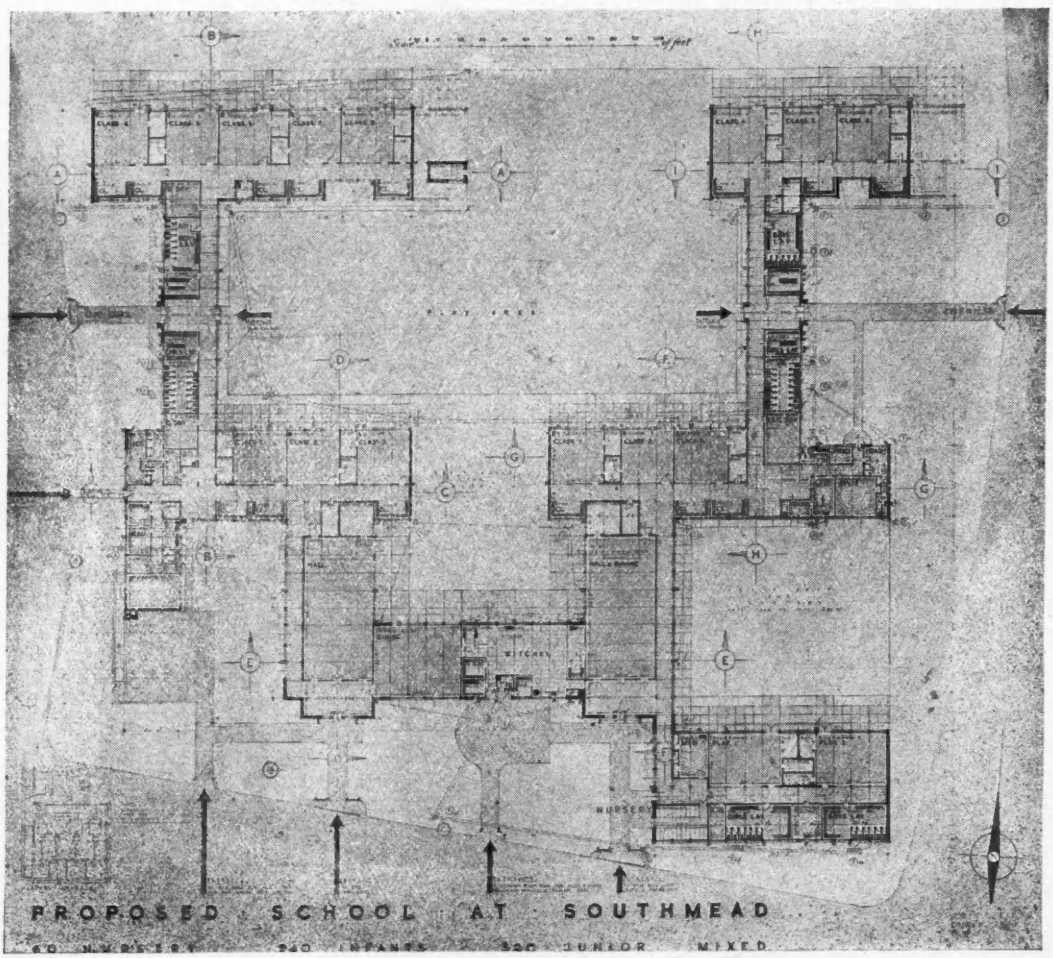
Internal Partitions. — "Thermacoust" slabs or 4½-in. brickwork according to position in building.

Roof.—"Thermacoust" slabs reinforced with light-gauge sheradised steel tees. For the pitched roofs the covering may consist of built-up roofing, tiles or slates as desired. For the flat roofs, built-up roofing or asphalt may be used.

Suspended Ceilings. — "Thermacoust" slabs carried in light-gauge sherardised steel tees. It is recommended that for classrooms, assembly hall and corridors the material should be spray-painted only, to provide sound absorption. For other sections of the building the slabs may be plastered if desired.

Windows.—Metal windows of the standard school type and unit sizes constructed of hot-rolled steel sections with all necessary coupling transomes and mullions as required. Fittings are of gunmetal throughout, finish B.M.A. All windows are rust-proofed by the hot-dip galvanising process.

Sills and Soffits.—Pressed aluminium alloy is adopted as a precaution against corrosion. The surfaces of sections are properly prepared for application of paint.



ARCHITECTS TO PUBLIC AUTHORITIES

R.I.B.A. "OFFICE ORGANISATION" DISCUSSION

THE principles underlying the organisation of architectural departments of public authorities were described and discussed at an "Office Organisation" meeting of the Royal Institute of British Architects held on Thursday, March 27. Mr. C. H. Aslin, F.R.I.B.A., County Architect, Hertfordshire, was in the chair.

The speakers were: Mr. Hubert Bennett, F.R.I.B.A., Architect to the West Riding County Council; Mr. D. E. E. Gibson, M.A., A.R.I.B.A., City Architect of Coventry; and Mr. Kenneth Campbell, A.R.I.B.A., of the Miners' Welfare Commission.

We take the following extracts from the speakers' remarks:—

MR. BENNETT, who began by describing the subject under discussion as being of vital importance to the future of the profession and a very controversial subject, said: In the West Riding the responsibility of the County Architect is that of the direction and supervision of the work and activity of the Department for which I am responsible to the County Finance Committee. Such duties include the design and construction of hospitals, schools, courthouses, clinics, and other buildings, also responsibility for the maintenance of all properties occupied or owned by the County Council. In dealing with an organisation capable of carrying one, two and three million pounds per annum, the department has been divided as follows: the main centre of the whole office is with the constructional division, and that is comprised of the professional and technical staff. They are divided into six sections, five of which are principally concerned with the administrative work of the various committees, while the sixth is responsible for the co-ordination of all architectural and technical matters. Each section is under the control of an assistant county architect.

The Educational programme has three sections: it is divided geographically because the area is so large; Public Health and Welfare is another, Standing Joint another, with assisting county architects for planning and design. Within this division are all the engineering and surveying staff concerned with engineering services required in buildings and the collection of all site survey data, heating and ventilating engineers, structural engineers, electrical engineers, site survey staff, and mining staff. We have to have mining staff because two-thirds of the territory is on coal, and in certain cases there are up to fifteen seams of coal below our building sites.

Building Maintenance.

The work of building maintenance outside the administrative centre is carried out by building inspectors. The area is divided into sixteen small areas, and they are related strictly to the divisional executive areas of the Education Committee.

Cinematograph and stage play regulations are also carried out by the departments with regard to 200 cinemas, and it is necessary to report annually regarding electrical and structural work and passing of plans.

The establishment of this central division at the present time is 132.

Supporting this central group in the office there is the Quantities and Measuring Division, with a principal quantity surveyor and a senior assistant quantity surveyor, dealing in detail with each committee on the County Council. There are a group of assistant and junior assistant quantity surveyors, pooled in order that the work of priority should receive attention.

The Clerical and General Division is organised into three sections, one dealing with general clerical work. There is a Section Accountant there, and the section comprises general clerical accounting and operating a new direct works organisation. The general clerical section, which involves clerks, clerk typists, and shorthand typists, is responsible for the collection of statistics, the compilation of records in respect of staff and general matters, general clerical administration duties, stationery supplies, office equipment, reports, schedules, quantities, specifications, and official orders.

The Accounts Section is responsible for the checking and verification of all accounts for the West Riding County Treasury, the payment of salaries and other matters appertaining thereto.

The Clerical and Accounts Section, with direct Works Organisation, is mainly connected with the costings, time-sheets and materials, and store-keeping. The establishment of that section is 46.

In dividing the organisation as set out, with a central technical and professional staff under central control, and not divided into separate sections, I think you will agree it is not a method which is adopted in many other local authorities. Personally, I believe the investigation and planning research work and any designing at all should always be the responsibility of the chief designer or the design staff under his direction. This means that the possibility of works for the various committees being designed under separate groups in varying standards, some good and some bad, cannot operate.

One of the most vitally important points is the closest possible collaboration from the preliminary sketch drawings to the completion of working contracts and specifications between the design staff and the assistant county architects, who are responsible to the Chief Officer for the administration work of the various committees.

An Open Commission.

MR. GIBSON said: What did appeal to me when I had the chance of going to Coventry was that it was a very open commission: it was to form a new department. I think there is a great advantage in that. To begin with, we found Coventry a great problem. Many things were wrong. Planning as we know it to-day did not exist, and having so much to do to catch up with a city that had doubled its size in a few years, we felt that planning was very important. The people in the office began to be very interested in it, and to try to persuade the City Council themselves to be interested in it.

The work in our office is divided into rather loose groups. We have one for planning development, one for housing, one for schools, and one for the other committees. We may have to separate that: if the National Health Bill takes a certain turn, we may find the new hospitals we have to build are such big things that we may have to have a group specially for hospitals; and one for quantity surveyors. We have two heating engineers, and we have a section (unfortunately) for building licensing, which we do not like at all. Incidentally, we are not using any architects for building licensing. We are using clerks of works and clerical staff, and keeping our architects for the things that they seem more able to do.

We try to make all our staff as self-important and complete as we can. We have a number of small, rather loose groups, each with a senior assistant, one or two assistants, and a junior, and they are responsible for a job. They do their own correspondence, have their own clerk of works to look after the job for them, and are quite responsible; in that way they are really architects on their own, and should get the satisfaction that they want, unlike some offices where the architectural staff rarely get out and rarely see what is being done.

We have one or two ideas, precautions if you like, as things do go wrong sometimes, especially where you get new people coming into the service, and we have a simple idea of putting in each job file a note of instructions, so that anybody in the Corporation's service ought to be able to do a job without going wrong. For instance, we make sure the job has Committee approval, that the land belongs to the Committee, that there is electricity in the street and that there are sewers available. We gradually found out a lot of things like that. It worked well, and people do know, and there is no excuse why they should not know, each stage in a job.

Costing worried me a little. I did not think anything about costing of jobs until the department started to ask what system shall we use for costing? Well, we have adopted a system which seems to work quite well, and I would like to hear what some of you may like to say about this. What happens is that our staff keep time sheets of the time they spend on different committees' work and jobs. The clerical section take those over eventually, add them up, and add them to the cost of the assistant's salary, and overheads to cover costs of heating and lighting, and my salary and my deputy's (who presumably do not do any of these works), and the proportionate result goes to each committee.

As to our clerical section, our policy is that all the clerical work that can be, should be done by clerical staff and not by architects.

I was rather shocked to hear the size of Hubert Bennett's staff—200-250. I think we have about 25 architectural staff. Although we know that with all the work to be done one must have colossal staffs, I personally would rather keep the department small, and have two or three separate departments, rather than one huge one, but that is only my own view.

We are trying now to use our private architects in the town to act as a sort of safety valve instead of building up a terrific staff to do all this outstanding work, to do some of it ourselves, and tell the committees we cannot do that for a long time, so you had better put it out. I think probably as official architects we would do a lot more of that if we were sure the work went where it ought to go.

Right Sort of People.

The recruitment of staff is very important. What we try to do is to get, not individuals only, because we are and will be a team in the department, what we look for when we make our appointments is, besides the quality of the work, people who are the right sort of people. We do like people to have other interests. One of our people is a Brooklands racing motorist. One told us at an interview that he specialised in breeding caterpillars, and so on, but those people, we find, are usually the sort who get on well with everyone else in the department, and they can make a contribution towards the work generally.

Like most people nowadays, I hope, we have group meetings, but we deal through

our chief assistant. The leaders of each of the main sections meet, and it is up to them to have their own group meetings with the people in the office. We iron out any difficulties we have in that way and it seems to work very satisfactorily.

To sum up, I feel the ideal organisation, if you can call it such, in an office, is to have a pleasant life for oneself and one's staff, and I think the looser it can be, the better.

MR. CAMPBELL, after tracing some of the history of the Miners' Welfare Commission, said :

Between 1928 and 1936 the scope of the work of the Commission grew enormously : the programme grew and became more complex, and as it did so, naturally the organisation developed. An organisation developed on the lines, which I think are fairly familiar to most people, of sectional departments. Those sections differed both from the type which we have heard about from Mr. Bennett, and from the type used in Coventry. They were not based on function : in other words, they were not sectionalised to deal with different types of buildings, nor were they, perhaps luckily, sectionalised on ability. There was not a central designing staff or section, with working sections all round it, but the division was an area division. The whole of the coalfields of the country were divided into North and South, then again into three sections, corresponding with the main coalfields. The structure of each of these departments, or rather the whole department to begin with, was roughly this, and I am speaking of pre-war practice.

There was the chief architect, the deputy architect, and underneath him two superintending architects, one responsible for the North and one for the South. Under each of these superintending architects there were three divisional architects, each dealing with an area. The set-up of each section is, or was, roughly this : the divisional architect, his senior assistant, two or three Grade I assistants, and two or three juniors. That was the set-up. Then, of course, in addition to the architectural sections, there is and was a quantity surveying section which was pooled for all sections. It worked for all—and a very small engineering department, which also was pooled for all. The engineering department was there mainly for maintenance work and also for vetting and reporting on schemes of engineering, heating, and so forth, and ventilation, which came in from outside specialists. We did not design our own structural work, or not in the sense of designing reinforcement, nor did we do the designing in heating and ventilation plants. They were carried out to our specifications, but the actual designing was carried out outside.

Resultant Spirit.

The important thing about this sectional development is the kind of work and the kind of spirit in which it resulted. I think there are advantages, and there are potential disadvantages. The advantages of it are several : I have about six. I believe as a matter of fact that the Miners' Welfare Commission was the first of the largest offices to experiment with this sectional type, and I do not think there are many, even now, which divide the sections up on an area and not on a functional basis.

Our little section of six or seven men has complete responsibility within the general overall policy, for its own work. The divisional architect acts almost as a private architect would in taking instructions in contact with the men on the spot, the local committees, and in running his own work.

There is, of course, a central filing system, which is adjusted by each section according to the feelings of the senior assistant.

Under the architect who works in this way is the senior assistant. I was a senior assistant for some time, and I have a very high opinion of senior assistants. They acted, in fact, as deputies to the divisional architect, and in view of the fact that he spent at least half of his time, at any rate pre-war, in his area—Northumberland, Durham, Birmingham or Nottingham—he had on his shoulders a fair amount of day-to-day responsibility. He acted as deputy and chief of the drawing office staff.

Below that were the Grade I assistants, each with one or two jobs for which he was responsible.

First of all, there was and is this feeling of general responsibility, a feeling of freedom to exercise to a very large extent one's own initiative. Secondly, there is the fact that the small section covers almost every type of work which the whole department covers.

Thirdly, having six sections working in one large office, there did grow up and there does exist a very healthy feeling of competition and rivalry between each section. The rivalry is on two bases : rivalry in production, and rivalry in standard of work.

The next point is that it means that each section has close contact with the actual people for whom they are working, *i.e.*, the miners, and there is also freedom to experiment.

Lastly, the advantage was and is the close contact with the senior man, with the architect. Instead of having large numbers of people in each rank above you, until you reach the top executives, the divisional architect is very close in every way to everybody in his section.

There are potentialities of disadvantages in the section system, but they can be stopped. First of all, it is possible for one section to make, shall we say, slight mistakes, while another section is making the same ones, and for there not to be a close co-ordination that would enable the experience of one section to be immediately of value to another. That is possible. Secondly, there could be, and I think may be from time to time, overlapping ; in other words, you may have two sections both tackling the same problem, both spending time on it, where perhaps one section tackling the job for all the others would have been a more efficient method. We are now, I think, or we hope now to take steps, to get over that point. The third one is a purely organisational point, the possibility of a slight inelasticity owing to the different incidence of work in the various sections. Once the section has developed as a unit it is not easy to prise a man loose from one section and add him to another section where work may temporarily be much heavier. That, I believe, has given a certain amount of trouble at higher levels within the department, but I think that can be got over.

Discussion.

A speaker in the course of the discussion pointed out : Mr. Bennett said in his office design groups were going on, where the design was executed in a special group. Mr. Gibson said in his office small units work on actual jobs, each having its own clerk of works. Mr. Campbell said in his office there were sections.

Although Mr. Campbell said it was a potential problem, I think it is a real one, that of co-ordination of design, especially in a very big office which has a tremendous amount of work to tackle.

May I put forward an alternative possible solution which has been tried at L.M.S., or is being tried, which I think has certain advantages, and that is a research and development section being set up. This research and development section would be interested purely in the design of standards, in the problem of materials, in the problem of design and prototypes of buildings. How far we go with these standards would be designated to the rest of the office, which could, on certain standards, allow the whole initiative to take part in the design, and be able to design freely within a certain limit, which a great organisation obviously needs.

Another problem which comes up is that of production, and I think a clerk of works to each unit would be rather unsuitable. I rather think the clerks of works could be joined together into a production office, with one clerk of works in charge of it, and as a big problem is tackled deficiencies in certain areas could be collated and mistakes in design co-ordinated, which would be more difficult if each section had its own clerk of works.

MR. CAMPBELL : I would like to say the Miners' Welfare Commission is contemplating setting up a Headquarters of Research Section which would not lay down standards but would investigate the functional problems which come up with any new work. They would be an investigatory section to produce the information and hand it on.

MR. GIBSON : I think the answer is, in a case like the L.M.S. or the Miners' Welfare, you might have need for that sort of thing. I should say that a smaller department can rely on the Building Research Station, who are doing these things for all of us, if we have the intelligence to make use of it, and send our problems to the specialists there.

MR. BENNETT : On the point of design, if in a large office like a country office you get independent pockets of design ; this has been one of the worst sides of official architecture for the last 25 years. You had so many jobs in an office that even the office boy got a job, and he was engaged in designing it. With a large office, you could have a pair of police houses with sand-faced brick and handmade tiles, an education department with a school with a pantile roof, a health department or a clinic in terra-cotta next year, and all that sort of thing.

Concluding the discussion, the CHAIRMAN said : A question was asked as to whether the R.I.B.A. gave sufficient backing to architects in public service. I think the fact that this meeting has been arranged is an indication that they do. I think it is an equal fact that this meeting certainly could not have taken place 15 years ago, because at that time architects to public authorities were looked upon as being some peculiar lesser breed than architects who earned their living in a different way. This meeting indicates that the architect in public service is recognised as being fellow to the other architects who get their work in a different manner.

Town and Country Planning Bill.

Sir Harold Bellman, speaking as chairman at the annual meeting of the Abbey National Building Society in London, described the Town and Country Planning Bill, now before Parliament, as "a cross between the fruits of experience and a leap in the dark, if two such unlikely progenitors can be conceived." They had to give the Bill, he said, an ethical basis as well as an administrative flexibility that would not retard the erection of houses now urgently needed.

MURAL PAINTING AS A VITAL ART

DISCUSSION AT THE ARCHITECTURAL ASSOCIATION

THE meeting of the Architectural Association held on Wednesday, March 26, at 36, Bedford-square, W.C.1, was made the occasion for a return to the pre-war custom of dining together before the lecture, and this fact, together with the interesting nature of the subject to be discussed, no doubt contributed to the very good attendance. The lecturer was MR. JOHN HUTTON (Joint Hon. Secretary of the Society of Mural Painters) and his theme was "Mural Painting as a Vital Art." Mr. Graham Dawbarn (President of the Architectural Association) was in the chair.

The lecturer said his remarks did not apply to such buildings as hotels and restaurants, but to civic buildings and big public enterprises where mural painting of some weight could do something to-day. He believed that mural painting could be, and should be, a real force in the expression of the emotions and feelings of our own time; and he thought architects were largely responsible for the illness from which mural painting had been suffering for many years, and the cure lay with them. He was himself a practical mural painter, generally worked with architects, and had experience of most of the difficulties and troubles encountered when trying to get mural paintings accepted and carried out.

There was a fundamental misunderstanding as to what mural painting should be. Was it enough for a mural painting to decorate a room? Or should its form and colour convey a message? Looking at British mural painting during the last fifty or hundred years, it was clear that neither architect nor artist could quite make up his mind as to what mural painting should be. There was a degree of uncertainty. But there had been no uncertainty about the Italians of the Renaissance. They knew they were to decorate the place and tell a story. If we to-day were to produce mural painting with vitality, it must have the quality of intensity. It was not the fault of the artist that this and other necessary qualities were wanting in contemporary mural painting: there was plenty of individuality shown by easel painters; without it they could not expect to get their work shown; but an artist with individuality and attack would find some difficulty in getting his paintings on the wall. Hence, arose the questions: What had kept vigorous painting away from walls, and how should it be got there? The answer lay with the architect, who was the arbiter in the matter of decoration. He worked with the client, and if he had a conception, which included mural decoration, which must have vigour, there were plenty of artists to supply this. If, on the other hand, the architect thought the mural painting (if any) should be quiet, not of a character to disturb the room and not to build up to any sort of climax, he would get a quiet and dull picture.

Mural painters must have courage. Looking at their work over the past fifty or hundred years, it would be seen that it had no surprise or excitement for people to-day. Even before they started the pictures were almost dead because the artists had tried to paint old masters But old masters could not be painted now: the work must be contemporary. A large painting on a wall was not necessarily mural. There must be a sense of decoration, a sense of the scale of the room, and the picture must have surprise and intensity to make it a living thing. In Europe and America before the war a lot of mural painting had been done, but it had no vision, no grip of form, and was rather like a background dividing dance music on the radio. An art as strong as mural painting could not be revived on that basis.

There were three reasons for the neglect of mural painting in Britain. One reason was that the huge pictures executed by R.A.s fifty or so years ago had been very expensive. People felt they could not afford mural paintings. Another factor was that functional architecture made decoration seem superfluous; but the swing towards functionalism should not have misplaced decorative work. He could not see how the evolution of architecture could be worked out without carrying the other arts with it. Decorative art must be worked out with contemporary architecture, the two going hand in hand. Before the war he had seen in Sweden a great deal of mural painting being carried out on the walls of buildings which were extremely contemporary work, and the paintings and the buildings went together very well. Architecture, it was said, was at the cross-roads, and that was true; but whatever road it took in future, it must carry decorative work with it.

As to cost, if the Government would say that of the total cost of State and civic buildings one and a half or two per cent. should be spent on decoration, as was the case in some Continental countries, something would be done. Where mural painting was used there was a great temptation to imitate what had been done in the past, and a kind of painting had been produced that went back to the times before Raphael. Such artists did not use a contemporary conception. The method was used by Burne-Jones. The work had crept into our churches, was still there, and now it needed a great deal of courage on the part of an architect to put anything with contemporary significance into a church.

Mural Design Competitions.

Making some constructive suggestions, the lecturer said there should be more attention paid to contemporary painting in the training of the architect to-day. The architect should know what contemporary artists were doing and understand it. The artist must learn what the architect was doing; otherwise he could not hope to fit his picture in properly. He must have worked out clearly in his mind what he was going to do when he came to the wall. We should have here competitions on the plan used in Sweden. By this method some dozen or so artists were invited to produce designs for a particular mural painting in some big city building. When the decision was made as to which design was most suitable, this was purchased and sent about the country in an exhibition. Artists living in provincial towns could see what was being done in that kind of decoration. There should be more publicity here on the whole matter of decoration. Lastly, he would suggest that architects should plan for the inclusion of mural painting in their work.

MR. J. MURRAY EASTON said that in the present stage of building the materials were very much against mural painting. He pleaded that mural painting should not be taken too seriously: he would like to get the British public used to having wall paintings not of the kind one saw in restaurants, but something between that and the monumental. It would be easier if mural painters did not take their job as a life work, but would put on the wall things like the sketches of Henry Moore. Clients must be gradually educated: the propaganda that had been done in Sweden was needed here. It might be years before we got a wall surface good enough to take murals, but the paintings might be done on canvas.

MR. HANS FEIBUSCH said that for the technique of mural painting there was no need to go to such elaborate building up as had formerly been used. There were new techniques and new media for mural painting, and if architects knew a little more about these things they would not be so much afraid of mural painting. As to the difficulty of persuading the client, if the architect made up his mind what was suitable for the job, and chose a painter who would do exactly what was needed, he would be able to persuade the client. Painters would jump at the opportunity to work within the frame of the building; they were stimulated by the firmness and architectural qualities of a wall. Architects to-day were too much enslaved by engineering. The painter's feeling for light and shade and the expressive qualities of form and colour could be of great effect in overcoming the sterility of many buildings. There ought to be a group of young architects, painters and sculptors working together.

More Insistence Needed.

MR. T. A. FENNEMORE said that during the last 20 or 30 years the nearer the architect had gone to sheer functionalism the higher the reputation he had achieved; but if the architect was to survive he must once more be an artist. He (the speaker) would like to see more courage in the insistence on the embellishment of buildings.

MR. R. Y. GOODDEN said the bulk of the finest mural painting had been produced at the time of the Renaissance; there was then a real reason for doing this kind of thing. The painters then had been teaching the people. The lecturer had suggested the training of architects, painters and sculptors together. An endeavour to do this was made at the Royal College of Art, and until these artists worked together from the time the building was planned there could be no real vitality in mural painting.

MR. H. WARREN WILSON said the work of the Middle Ages had been produced for patrons who were extraordinarily powerful, very rich, generous and artistically receptive; but since that time there had been no really satisfactory patron. He mistrusted any compulsory measure for the inclusion of mural painting in architectural composition. We could only hope for really exciting stuff if the maximum amount of freedom was given to the creative artist.

SIR CHARLES REILLY said he believed modern architecture gave good opportunity for mural paintings. Its walls were bare, but they were monumental. The picture should express the lightness and mobility of the modern wall just as Rococo and Renaissance painters had expressed their own times.

Replying to the discussion, the lecturer said he agreed that mural artists should do contemporary work. It should be monumental in some cases, but need not be always so, and should relate to the architecture of to-day. He agreed that painters really enjoyed the limitation of working with an architect. As to materials, very often the difficulty was that the artist was asked to paint on what was really a green wall, and he could not do that unless he used true fresco, and worked while the wall was really being built. But true fresco got very dirty in England and was very much affected by damp.

LEGAL RESPONSIBILITIES OF QUANTITY SURVEYORS

DISCUSSION ON R.I.C.S. PAPER

Some of the legal responsibilities of the quantity surveyor were discussed by Mr. E. J. Rimmer, M.Eng., B.Sc., A.M.I.C.E., Barrister-at-Law, at a meeting of the Quantity Surveyors' Committee of the Royal Institution of Chartered Surveyors recently. Mr. H. J. Venning, chairman of the Committee, presided.

In the course of his paper, the author dealt with the taking out and preparation of bills of quantities and measuring and making up accounts of variations upon contracts, including pricing and agreeing totals with contractors. He then went on to discuss the preparation of approximate estimates based on measurements, and concluded with some remarks on the checking of tenders.

In the discussion which followed the paper, Mr. M. H. Thackray, F.S.I., proposing a vote of thanks, said the author stated in his paper that he found some difficulty in knowing precisely what was meant by " the principles of the Standard Method of Measurement." In the current edition of the Standard Method one found the following paragraph in the preface to the third edition : " Some degree of latitude has of necessity been given in matters of detail, but the general endeavour has been to set an absolute standard in matters of principle," and, as he understood it, the meaning of that paragraph was that the Joint Committee then in being did not attempt and, in fact, thought it would be wrong to attempt to lay down specific rules for every set of conditions which might apply to a quantity surveyor's work, and therefore restricted its endeavours to general principles. Whether the paragraph in question conveyed the intended meaning or not, he hesitated to say, but those members of the Institution who had spent a great deal of time in the past two years in trying to revise the Standard Method realised how extremely difficult, if not impossible, it was to find a clear and satisfactory wording for many of the clauses in that much-used document.

Mr. J. G. Osborne, F.S.I., seconding, said that a point which he wished to raise on the preparation of quantities was whether the quantity surveyor was liable where some of the data were provided by the architect or the employer. He had in mind a pre-war case quoted by a very learned barrister in *The Builder*. The case was that of a firm who were employed to design a bridge, and were provided by the local authority with certain data regarding the subsoil. They designed the bridge, based on those data, which proved to be incorrect. A large sum of extras was involved, and the firm designing the bridge were held to be liable. From that case the learned barrister concluded that a quantity surveyor who measured foundations from data provided by the architect would be liable for any extras.

Mr. H. A. Ackland, F.S.I., said that with regard to the author's statement : " I do not think it is clear that it is for the surveyor to decide whether a particular piece of work is of similar character or executed under similar conditions as the work priced in the bill of quantities," he would like to ask who would decide that question if the quantity surveyor did not? He took it that the author meant that the surveyor was not to decide it on his own opinion only, but had to get evidence about it.

Mr. G. P. Vale, F.S.I., said some years ago his firm had been asked by a local authority what financial responsibilities they accepted with regard to their quantities, and, frankly, they did not know the answer.

Mr. C. A. Morrison, F.S.I., said the author had been very definite in his statements except in one case. In the last section of the paper the author said : " It is a little difficult to visualise copyright in bills of quantities prepared in accordance with the Standard Method of Measurement," and he would like him to be a little more definite in that respect, in view of the fact that, although the bills of quantities might be prepared according to the Standard Method, the brains of the quantity surveyor were applied specifically to a definite job. He thought that should constitute a copyright in the bills of quantities.

Mr. A. W. Davson, F.S.I., referring to the question of the principles governing bills of quantities, said he believed that the word " principles " had not been inserted in the first form of contract in which the Standard Method of Measurement was included, and that it was in a later edition that the word had been used. He did not think there was any very great difficulty on the question of the principles. The quantity surveyor was still an individualist, and it would be unsound to bind him down to applying certain details. The value of the Standard Method of Measurement lay in the safeguard that it provided. If a quantity surveyor complied with it in a practical manner, he was on safe ground; it was the academic approach that he should avoid. If he departed from the Standard Method, but still applied the general principles of it in a practical manner, both sides would be satisfied. That was the reason, he thought, for the word " principles " being now, quite properly, used.

A Difficult Decision.

Mr. Rimmer, answering some of the questions raised, said he agreed that one of the most difficult matters was to decide just where the quantity surveyor's functions passed from those of a servant of the building owner and became those of the person who was independent of both the building owner and the architect, the quantity surveyor acting then in a judicial capacity and exercising his functions without consulting the interests of either. He wished to point out that it was not the case that all the functions of the quantity surveyor were judicial. The quantity surveyor was not acting in a judicial capacity in preparing his bills of quantities. He did that for the building owner; it might be that he was engaged by the architect to do it, but he still did it under contract of service to the building owner. There was nothing judicial in the preparation of bills of quantities, for the reason that in the contract between the building owner and the contractor there were all the provisions necessary for rectifying, as between them, any error or omission in the bills of quantities. The quantity surveyor, therefore, was certainly not acting in a *quasi*-judicial capacity in performing that function. It was in the realm of valuation that the quantity surveyor assumed the position in which he could disregard the instructions and views of his client, the building owner, and could consider himself perfectly independent to act as he thought fit.

With regard to the question of when the quantity surveyor was the servant of the building owner, as distinct from the servant of the architect, which he might be for a particular function, it had been held that the building owner's authorisation of the architect to engage a quantity surveyor could be implied if the nature of the work was such that there was an implication that a quantity surveyor's services would be required. In that case the quantity surveyor's services were impliedly engaged by the architect on behalf of the building owner, and it was only in the case of the subsidiary functions which quantity surveyors sometimes performed, such as preparing a specification or reporting for interim certificates, that there could be no such implication.

On the question of whether or not the quantity surveyor could prepare bills of quantities according to the principles of the Standard Method of Measurement without following the details of the Standard Method of Measurement, he agreed that a quantity surveyor was following the principles if all that he did was to follow the Standard Method and select from it one of two alternatives, but he was concerned with the surveyor who said in the heading to his bills of quantities : " These bills of quantities are prepared in accordance with the principles of the Standard Method of Measurement " when he had not, in fact, followed the Standard Method in detail, which was, in fact, the principle. He found it very difficult to say that if a surveyor had measured something in a way that was not approved in the Standard Method, he had followed the principle of that Standard Method. However, that was no doubt a matter of controversy, and he would leave it at that.

He would suggest that the pecuniary responsibility in connection with the preparation of bills of quantities did not seem to be a very heavy one, and that, if any Government Department asked quantity surveyors to reduce their fees because the Department was relieving them from a pecuniary responsibility, they should consider very carefully whether it was worth making much sacrifice for that relief.

With regard to copyright, the building owner was not entitled to use the documents prepared for a particular contract for a purpose other than that for which they were prepared, so there was entire protection for the bills of quantities prepared for a particular job, apart from any question of copyright.

HOUSING PROGRESS

REPORT FOR FEBRUARY

Although outside building work was at a standstill over wide areas of Great Britain during most of February, and inside work was severely hampered, 4,432 permanent houses were completed during the month. This compares with 8,824 during January (one week of which was affected by the extreme weather) and 9,999 in December. The number of temporary houses completed during February fell to 2,401, compared with 4,764 in January and 12,171 in December.

At February 28 a total of 171,058 houses had been completed (71,467 permanent and 99,591 temporary). Of the permanent houses, 29,793 have been built by local authority agency and 33,144 by private enterprise. There are under construction another 215,706 permanent and 9,712 temporary houses. No figures for men employed in February are available.

Production figures for a number of building materials during February are not yet available. Below is a comparison from those included :

	Feb.	*Jan.*	*Dec.*
Cement (thousands of tons)	192†	550*	517†
Plasterboard (thousands of sq. yds.) ..	1,598†	3,424*	3,002†
Drain pipes, salt glazed (thousands of tons)	27.8	39.5	37.4
Bricks (millions) ..	247	379	353
Plaster gypseous (thousands of tons)	6.2†	18.7*	15.6†

* 5-week period. † 4-week period.

CORRESPONDENCE

The One-Pipe Soil System.

To the Editor of *The Builder*.

Sir,—I appreciated some of the points put forward by your correspondent G. W. H. in his reply to my letter in *The Builder* for March 21. It seems, however, that I left considerable room for misunderstanding, I having in mind only an effective method of remedial and/or preventive measures against "freeze-up" to existing systems at the lowest possible cost to the building owner, and I feel sure my suggestions could be incorporated with advantage in new external systems.

The "combined waste and drainage system," as it was called by an early writer, has undergone many changes since its inception, by recommendations of academic sanitary bodies, public bye-laws, district surveyors' approvals, and the like, but in principle it has remained the same—i.e., the discharge of multiple soil and/or waste services into a common single service to connect with the general ground sewerage system, thus lessening the number of unsightly stackpipes required and lowering installation costs. Many technical and other names have been given the system, but the "One-Pipe System" is the general reference that is commonly understood by building trade personnel. This system is so widespread that some effort ought to be made to standardise its installation and layout and so lower costs generally, and particularly maintenance costs, possibly simplifying its installation to a point where it will be a useful contribution towards increasing production.

There appear to be, with variations, two main styles—that having one continuous anti-syphonage connected to every trap, and that having separate "antis." Preference should be given to the first style, though often building layout and other considerations make it desirable to use either or both styles.

In the best interests of the building owner all possible points should be treated in their true relationship to each other; often artistic appearance, temporary initial price advantages and personal bias in the choice of materials are allowed to outweigh such considerations as the ability of the man who is going to instal and maintain the system, the possibility of silly accidents, dilapidations, and blockages from climatic and other causes, while even childish pranks may mean a costly overhead to the building owner.

It is my considered opinion that coated cast-iron soil pipes and fittings are the soundest investment, being cheap, strong, fireproof, hygienic—because of low porosity—dent-proof, practically non-corrosive even after the coating has worn off. They have a low expansive range, and, generally speaking, replacements conform to a standard throughout the country.

The system should be used internally only when the peculiarities of the building make it unavoidable; usually many so-called internal systems, being part of large architectural structures, are located in manhole-like ducts or wells and are in reality external. Often internal systems are tucked away inaccessibly with furniture and other tenants' chattels, accentuating maintenance difficulties. When hidden behind casings, secondary damage is caused by the maintenance plumber in his efforts to "get at" the access door or fault, and casings can easily hide fungoid growth, etc., long enough to menace the whole building before being discovered. Apart from having no decorative value of their own, internal stackpipes make any comprehensive decorative scheme difficult and usually spoil any scheme so devised by the condensation attracted.

The sanitary advantages of the external system are undeniable when consideration is given to the unavoidably unsavoury conditions inseparable from drainage and soil maintenance work, though more services should be run through or near balconies to avoid the necessity of long ladders. It would also be an advantage if the walls behind w.c. suites were recessed to obtain the minimum wall thickness for the branches and "antis." The costs of lintels and arches will be offset by reduced maintenance costs later. The service between the trap and stack usually travels through such an engineering "feat," comprising floors, walls, arches, lintels, bandcourses, etc., that seldom is adequate fall obtained to prevent alluvial "furring," itself a common cause of stoppage, at a location that is otherwise prone to blockages.

The extra "use" area of the building provided by the external system affords more scope for layout and lessens the architect's difficulties when considering the provision of fixtures.

H. E. Campbell,
London, N.1. Clerk of Works.

ELECTRICAL SPACE HEATING

NEW DRAFT CODE

"Installation of Domestic Electric Space Heating Equipment," draft British Standard Code of Practice 3.6421, is a further addition to the Electrical Installations series of codes, to be read in conjunction with the main code, 3.6 "Electrical Installations—General." It has been prepared by a Committee convened by the Institution of Electrical Engineers and issued under the authority of the Codes of Practice Committee for comment. This draft code gives guidance for space heating of single family dwellings by the installation of independent electrical appliances, as distinct from central heating systems. The design of suitable installations (exclusive of wiring), the heat requirements and heat losses of typical dwellings and the classification of heaters are dealt with.

Comments, which should be forwarded by May 14, are invited and will be welcomed. Copies may be obtained from the British Standards Institution, 28, Victoria-street, S.W.1, price 2s.

Above photo shows two pairs of a range of King Sliding Doors, erected at a large modern factory. Note particularly extreme height and heavy construction. All over the country leading firms have installed King Sliding Doors, and found them to give long and satisfactory service.

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THE WORK OF THE ORDNANCE SURVEY

POST-WAR PROGRAMME

The enormous task the Ordnance Survey has in the fulfilment of its post-war programme was indicated by Brigadier K. M. Papworth, O.B.E., M.C., when he addressed a recent meeting of the Town Planning Institute.

Describing the situation at the close of the war, the speaker said: The general situation in 1945 was briefly as follows: (*a*) The new primary triangulation was well in hand and some of the secondary blocks had been completed; (*b*) conversion of levelling to the Newlyn Datum in hand; (*c*) the small scale series were being recast on the transverse Mercator projection; (*d*) the large scale plans, except for those revised for the Town and Country Planning Act, were badly out of date. This in its turn affected all smaller scales.

The post-war programme for the Ordnance Survey announced in Parliament by the Minister of Agriculture and Fisheries on April 25, 1945, adopted the principal recommendations of the Davidson Committee. Two items of general importance were the change to the transverse Mercator projection and the adoption of a national grid.

As the large scale plans are to be drawn on national sheet-lines, it is necessary to choose a projection free from large errors. The Cassini projection is unsuitable for this purpose because of its large linear and angular distortions. The transverse Mercator projection, already in use for small scale maps, was therefore adopted. This projection has the advantage of being orthomorphic so that angular errors are virtually negligible. The scale error at the extreme east and west limits of Great Britain does not exceed 1 part in 1,250. By incorporating a scale factor of half this amount the resulting scale error can be kept within ± 1 part in 2,500. This is hardly measurable except in precise surveys.

It should be noted that areas will be affected by twice this amount. An area of 2,500 acres will scale 2,498 acres on the central meridian and 2,502 acres at the extreme east and west limits of Great Britain. The acreages shown on the new plans will allow for the scale error, the rate of change of which is so slow that it can be treated as sensibly uniform over an area of, say, six or seven miles square.

National Grid.

The central meridian of a transverse Mercator projection is represented by a straight line. A series of straight lines are drawn parallel and at right angles to this line at equal intervals which depend on the scale of the map. An intersection of these lines lying to the south-west of the area under consideration is chosen as the origin of co-ordinates. The lines are numbered consecutively eastwards and northwards from the origin. Each square is denoted by the co-ordinates of its south-west corner. It is essential that a decimal unit of measurement for the grid should be adopted. For this reason the metre has been chosen for Great Britain.

Not only is the grid a valuable help in the collation of topographical and other data, but it has the great advantage that the reference of a point is sensibly the same whatever the scale of the map and whatever the edition.

After enumerating the principal maps which are being, or have been, published, the speaker went on to refer to air photo mosaics, and said: As an interim measure, until we can publish accurately surveyed 1/1,250 plans, we are producing air photo mosaics on the same sheet-lines and at approximately the same scale. They are intended to meet

the need for an up-to-date representation of the ground. They are not accurate plans since height distortions make it impossible to fit them exactly to the true plan. Edges of adjoining mosaics will also not match exactly. We have only recently received authority to place these mosaics on sale. They will cost £1 each, which is expensive, but a reduction can only be considered if sales are considerably bigger than we expect. Some experimental mosaics have been produced at 1/5,000, 6-in. and 1/25,000 scale, but it is still uncertain if these will become regular series.

After the secondary blocks have been observed and computed, control points in built up areas are fixed by traverses, which are divided into main and secondary lines and are rigorously adjusted to the triangulation. Between these traverses a number of minor traverses are also observed. At road junctions and places where detail lines may take off we fix "revision points." They are usually sited in groups of three on such places as the corners of walls and man-holes, pillar-boxes, etc. They are fixed to an accuracy of ± 0.1 metre and are designed to provide the necessary control for a 1/500 survey. Revision points are described by photographs and books giving photos and co-ordinates of the revision points in each 1/2,500 plan will be available at 5s. a copy.

Air Survey.

It is necessary to get air survey into its correct perspective. Some people think that air survey is the answer to the surveyor's prayer; others, that given an air photo any surveyor worth his salt can produce a map. The real position is very different. Air survey is merely one of the clubs in the surveyor's bag to be used only for those shots for which no other club is better. Secondly, just like clothes, air photography must be carefully made to measure and cut for the special object for which it is required.

Now the general principle that the Ordnance Survey works upon is that it surveys at its largest scale and produces the smaller scales by reduction and generalisation. We require photography mainly for 1/1,250 and 1/2,500 surveys and there are many difficulties in its use.

The ground is not flat; the sun throws long shadows which hide detail; photos show the roof-plans of houses and the tops of trees and hedges. We require photos taken on a stable film in a camera free from lens and shutter distortions. We want slow and stable aircraft, whereas planes are getting faster every day. Surveys must proceed on a timed programme. There are only about 20 days a year in Great Britain which are suitable for photography. We have never received in any year the photography ordered for that year. There has always been a backlog to carry forward to the next season.

On the other hand, given the photos, air survey is unaffected by wet weather which causes a loss of about one day in seven in field surveys. We have carried out a number of experiments, the results of which are very promising. I hope that there will be considerably more information available at the end of the year to show along what lines we should proceed to increase our speed of survey by the use of this new weapon.

R.I.C.S.

Junior Quantity Surveyors.

A meeting of Junior Quantity Surveyor members of the Royal Institution of Chartered Surveyors was held on March 27 to hear an address on "Processes and Problems in Reproducing Documents and Plans for Architects and Quantity Surveyors." The address was followed by questions and a general discussion.

PROFESSIONAL EDUCATION

MR. WORSLEY'S PAPER TO R.I.C.S.

SOME of the aims and objects of professional education and interesting comments on the present system were dealt with by MR. S. J. WORSLEY, D.S.O., M.C., M.A., Principal of the College of Estate Management, recently. MR. WORSLEY, who was addressing a meeting of the Royal Institution of Chartered Surveyors, began by defining the terms "education" and "profession," and we take the following extracts from his subsequent remarks :—

The first point I would wish to emphasise is that professional education is still education and governed by principles applicable to all forms of education. My own belief is that what professional education ought to set out to do is to educate *for* a profession, not solely *in* professional work. What I mean is that it should provide a foundation for those who aspire to enter a profession rather than attempt to give a student a smattering of professional knowledge, which can best be acquired in the job. At the same time the success of the practical experience, except in the case of the born this or that, depends largely on the intellectual equipment and mental training of the entrant to the profession. Of course, if we have in mind a dead level of achievement, respectable mediocrity, we need not waste much time, but in this case we should be overlooking the all-important requirement to see to it that a body of experts, laying claims to leadership, does itself make every effort to develop leadership qualities in its own members. We do not need surveyors anything like so much as good surveyors.

The Right Aim.

It is, in short, a question not of teaching students the answer to problems which senior members may have come across after years of experience, but of equipping them to face up to any problem. I am convinced that the right aim of professional education, up to the stage of the first qualification, is to lay the foundations, to consolidate the basis on which a useful and successful professional career can be built. Equally I feel that it is a mistake at this stage to concentrate too severely on what practical men are too often inclined to consider *useful*. I may as well say at once that my object would be achieved by changing, not the subjects taught, but the method of approach, and, in some cases, the content of the subjects.

The Curriculum.

I do not feel that what is needed is a substitution of one set of subjects for those at present laid down for students, though I can think of one or two subjects which might be added at the expense of others. Two of these I mention now. The first is a subject designed to teach students something about the requirements of the code of professional conduct, not small details, but the guiding principles. The other subject is history, without which we go sadly astray in our efforts at planning for the present and future of our people. No, it is the approach rather than the subjects, which I feel to be at fault.

At some point a foundation must be laid, and here I should like to say something about the beginning. The more technical and professional the examination, the more necessary it is to insist on a sound preliminary education. If what I think of as education is continued throughout a professional course, and not dropped like a hot cake, then we can be more lenient in regard to preliminary education, though never with the best results, for the age of sixteen or seventeen is much too young to think of general education as a thing of the past. Reliance on self-education is, to say the least of it, chanceful.

But because the tendency seems to be for the examinations to take on more and more the character of tests of professional knowledge, it is more and more necessary to consider the foundations of professional education. At present the standard of the Preliminary Examination of the Royal Institution is at least four years lower than that of the normal examination standard for entry to the Universities. Our standard is one which any ordinarily intelligent student can reach at between fourteen and fifteen years of age. From the point of view of general education it is no standard at all.

Nevertheless, from the moment the student enters upon his professional course his general education is increasingly neglected. There is an element remaining in the First Examination in Central and Local Government, Elements of Economics and Law, but in all there are nine subjects to be studied in a year, which means that only a sketchy study and knowledge are required, or indeed possible.

Now, even if the preliminary standard is raised, there need be nothing like so much neglect of general education in the remainder of the course. But subjects would have to be reduced in number, and treated from a wider and more general point of view. It is worth repeating that our aim ought to be to turn out men who can think, and take their place as leaders in the community. For such an aim the methods are too narrowly prescribed.

In all I have said I have had in mind the fact that the vast majority of students prepare by means of postal courses, studied mainly after a day's work —not the best preparation for real study. The present system makes it almost ludicrous for these students even to think about general education—all they can do is to cram their papers which, on account

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of the pressure of circumstances, have to be designed "to get them through." Ideally a postal student's course should be much longer than that of a full-time student—as should the course of an evening student.

In short, I would say that the Royal Institution asks at once too much and too little; too much to be profitably undertaken on the basis of the preliminary education of the mass of students, and too little in nearly every subject to make the study of the subject of permanent value as an instrument of education.

Examinations.

Now I ought to say something about examinations, those necessary evils which it is exceedingly difficult to replace. Most of us would agree that there were definite objects in examinations, though we should probably differ as to some of them. I can only give my own views. As I look at examinations I see the following objects: 1. To test quality of mind, rather than memory, for there are such things as books of reference. 2. To test powers of application and industry—perhaps this might be called character. 3. To test aptitude—in our case for the profession.

An examination must, of course, be specially designed to achieve its objects—they will not be achieved automatically by any and every kind of test.

First of all there must be expert examiners who know what is wanted. Examining is an art, and a most difficult one. The best examiners are not always the most learned, or those with the highest professional qualifications. By and large, the best qualified examiners are teachers. As we are dealing with examinations designed for technical purposes, naturally and properly professional men must take a hand. But no one individual can be expected to assess examination results without error, since he is human. Therefore, for our examinations, I recommend that there should be two examiners in each subject, one being a teacher and one a professional man. The argument in favour of employing teachers as examiners is based on the plain fact that unless teachers do take a hand, the examinations must govern the teaching, instead of the reverse, and that the dual system of the external examination (*i.e.*, one set of people responsible for teaching and another for examination) means often a conflict of ideas between teachers and examiners and an unco-ordinated system of education.

In the second place, there should always be a wide choice of questions. At least a student should have a chance of showing what he knows rather than what he does not know. It may well be possible to set a hundred questions, and it may also be that the four or five a student is required to answer may be just the ones he knows least about. It can hardly be news to you that there is in existence at present a successful industry known as "spotting the questions." In some subjects the forecast can be remarkably accurate, in which case the four or five answers may well represent all the student knows.

Then again, questions should be different in character; some should be set so as to attract the "stars." These will be questions requiring the exercise of powers of thought and expression.

As to practical examinations—I am all in favour of these. I am used to a system in which a three-hour paper in experimental subjects is always followed by a six-hour practical. But here again it is a student's powers which ought to be tested as well as his knowledge. Practical tests should not be in the hands of single examiners who are unavoidably prone to frown on ideas which they do not share.

There is much to be said for a *viva voce* examination which might be combined with the practical. It is very difficult otherwise to achieve one object, in cases where students are quite unknown, viz., that of testing aptitude for a calling.

I should like to conclude what I have to say on the conduct of examinations by some remarks on the method of assessing results. I disagree entirely with the view that a proper result can be reached solely by an arithmetical sum. Marks ought to be a method of expressing an opinion, and an opinion is required on a paper as a whole. In examinations where there is only one examiner for each subject, there ought to be a corrective in the form of a super-examiner—a Moderator.

R.I.B.A. DISTINCTION IN TOWN PLANNING

THE award of the R.I.B.A. Distinction in Town Planning, with effect from June 1, 1947, will be by conferment instead of by examination, and will be limited to Fellows, Associates and Licentiates of the R.I.B.A.

The Distinction is the highest award in Town and Country Planning that the R.I.B.A. can bestow. It is primarily for members of the R.I.B.A. who have made some contribution in the field of large-scale planning, especially in visual and three-dimensional planning, which is so vital in the development schemes that will take place throughout the country.

Recommendations will be submitted to the Council by a standing committee to be set up for the purpose. The title of the award and the affix denoting it will remain unchanged.

Personal applications by candidates will not be entertained. The name of a candidate must be submitted by three sponsors, themselves members of the R.I.B.A., who will be required to submit the following particulars on behalf of the candidate:—

(*a*) Details of professional qualifications and experience.

(*b*) Evidence of his work and achievements in the field of town and country planning, including three-dimensional planning; such evidence to consist of a list of the candidate's work, together with references to professional journals in which the works have been illustrated, and such other evidence as may assist the committee in making their recommendation to the Council. No fee will be required from the candidate.

Any present candidates for the examination for the Distinction under the previous procedure will be dealt with by the panel of examiners under that procedure.

LAW REPORTS

PROVISION OF DUSTBINS

KING'S BENCH DIVISIONAL COURT.
Before LORD CHIEF JUSTICE and JUSTICES HUMPHREYS and LEWIS.

Mrs. M. Thomas v. Croydon Corporation (an Appeal).

In a King's Bench Divisional Court of the High Court, the Lord Chief Justice (Lord Goddard) and Justices Humphreys and Lewis had before them, by way of case stated, an appeal by the Corporation of Croydon from a decision of the Croydon Justices, who allowed an appeal by Mrs. M. Thomas, the owner of certain houses in Claud-road and Church-road, Croydon, from an Order made by the Corporation requiring her, under the Public Health Act, 1936, to provide dustbins for each of her houses.

The section of the Act in question was Section 75, which gave the Corporation power to call upon the owner or occupier of houses to provide covered dustbins at the property in question. It also gave a right of appeal to the courts. Mrs. Thomas had been duly served with the notices and called to her aid Section 290, Sub-section 3, which provided that a third party could be brought before the court, and she contended that the occupiers should have been served with copies of the notices, notwithstanding that Section 75 made no provision for such service.

For the Corporation it was submitted that it was for them to determine upon whom the notices should be served and that all the magistrates could do was to deal with details concerning the size of the bins and other minor details.

It was argued for the respondent that the magistrates arrived at a right conclusion, and that under Section 75 respondent had full power to appeal.

The court unanimously dismissed the appeal, with costs.

Lord Goddard, in giving judgment, said that in his view it was obvious that Parliament intended that the discretion exercised by the local authority should be subject to an appeal and, further, that the final determination was to be in the hands of the magistrates and not the local authority. Section 75 had to be read as it stood, and it clearly gave an unrestricted right of appeal. Here it was clear that the section did not purport to vary the terms agreed between landlord and tenant, but if the Corporation could, at its discretion, throw a burden on one or the other, it might be materially interfering with the agreement arrived at between the parties. One of the reasons given by the magistrates for their decision was that they were not satisfied that there was a proper exercise by the Corporation of the discretion imposed by Section 75. Here the Corporation was giving a discretion and as there was a right of appeal against the Order, it followed the magistrates could either reverse the discretion or differ from that of the Corporation. In his opinion, the words of the section were far too wide for the Corporation's submission to prevail. The court was not concerned with what consequences might follow, or how it ultimately would work out.

RENT RESTRICTION LEGISLATION AND EFFECT OF SUB-LETTING PREMISES WITHOUT LICENCE

COURT OF APPEAL.
Before LORDS JUSTICES MORTON, BUCKNILL and ASQUITH.

Watson v. Saunders-Roe, Ltd.

This case, concerning a dispute between landlord and tenants as to the effect of sub-letting premises without licence and which is to go to the House of Lords for final settlement, came before the Court on the appeal of the defendants, Messrs. Saunders-Roe, Ltd., the tenants of a house known as New House, King George's-drive, Newhaw, Addlestone, Surrey (of which the plaintiff, Mr. H. R. Watson, was the landlord), from the judgment of Judge Hancock at Kingston County Court.

The facts of the case were these: On September 30, 1940, the plaintiff let the house in question to defendants for three years. When the tenancy expired in 1943 the parties agreed to the tenancy being extended on the same covenants, terms and conditions as those contained in the agreement of September 30, 1940; but subject to either party having the right to determine the tenancy by giving one month's notice to the other.

Clause 3 of the original agreement contained a provision that the tenants should not assign, underlet or part with the possession of the demised premises or any part thereof without the written consent of the landlord. The defendants, the tenants, however, in breach of that provision did sub-let the premises and the plaintiff was ignorant of that sub-letting until August 9, 1944, from which date the plaintiff continued to accept rent from the defendants.

On January 21, 1946, the defendants gave the plaintiff notice of their intention to quit on February 28. The defendants also gave the sub-tenants notice to quit, but the latter declined to do so, claiming the protection of the Rent Restrictions Acts. As the sub-tenants remained in possession of the premises, the plaintiff, as the landlord, brought the present action against the defendants, alleging that in the circumstances they were holding over under the agreement of September, 1940, and claiming £20 1s. 3d. as representing the rent and alternatively use and occupation for the months March, April and May, 1946. The defendants counterclaimed to recover one month's rent overpaid in error.

The County Court Judge decided the case in favour of the landlord. He held that as the plaintiff, as landlord, had accepted rent with knowledge of the breach of the covenant against sub-letting, the sub-tenancy under Section 15 (3) of the Rent Restrictions Act, 1920, was lawful and that the sub-tenant could not in the circumstances be evicted by the defendants as tenants or by the plaintiff as landlord. But the defendants' inability to get rid of the sub-tenant and give vacant possession to the landlord was due to the defendants' original fault in sub-letting the premises without licence and that the landlord's subsequent acquiescence had no bearing on the defendants' inability to get the sub-tenant out. He accordingly gave judgment for the plaintiff for £20 1s. 3d., the amount claimed with costs and from this result the defendants now appealed.

The Court allowed the appeal.

Lord Justice Morton, in the course of giving judgment, said that in his opinion the case was governed by the decisions in the Divisional Court in the cases of Norman *v.* Simpson and Reynolds *v.* Bannerman. It was necessary to consider what was the position of the sub-tenant in the present case. The conclusion seemed inevitable so long as the decision in Norman *v.* Simpson stood that the sub-tenant by virtue of Section 15 (3) of the Rent Restrictions Act, 1920, was deemed to become the tenant of the landlord on the same terms as those on which the head tenant had held the premises. That cut out any claim by the landlord in respect of rent or use and occupation against the defendants as tenants. The sub-tenant was now the person deemed to be the tenant.

In Reynolds *v.* Bannerman it was held that as the tenant had done all he could to give vacant possession he was not liable to the landlord for use and occupation while the latter was kept out of possession. It was sought to distinguish the present case from Reynolds *v.* Bannerman on the ground that there the sub-letting was not in breach of covenant. The answer was that having regard to Norman v. Simpson, the premises at the material time—*viz.*, just before the expiration of the notice to quit, were lawfully sub-let, in either event. The distinctions on which it was sought to rely, between the two cases, were distinctions without a difference. In his opinion the appeal succeeded and should be allowed and judgment entered for the defendants on the claim and also on the counter-claim for rent paid in error.

The other members of the Court concurred and the appeal was accordingly allowed with costs.

The plaintiff was given leave to appeal from the judgment to the House of Lords.

APPEAL UNDER THE HOUSING ACTS, 1925-36.

KING'S BENCH DIVISION.
Before MR. JUSTICE MORRIS.

Minister of Health v. Rodwell and Buckley.

In this case Mr. Aldwin Horatio Rodwell and Mr. Buckley, as executors of the late owner of The Laund, Saunders-lane, New Longton, Lancashire, appealed from a compulsory Order obtained by the Lancashire County Council for the acquisition of the house and land for the use of police purposes. The Order had been confirmed by the Minister.

The appellants' argument was that house and land was not required for purposes under the Housing Acts, but as a residence for a chief superintendent of police, and that the acquisition could not said to be for the purposes of the Act. The land attached to the houses, about 3 acres, would be used for police purposes.

It was submitted on behalf of the Minister that under Section 97 of the Act the Council could acquire the property of a person employed or paid by them.

His lordship held that the Minister's contention was the correct one and that the acquisition of the property for the superintendent was within the ambit of the Section, and dismissed the appeal, with costs.

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NEWS ITEMS

Change of Address.

The Rom River Company, Ltd., have removed to 3-16, Woburn-place, London, W.C.1. Telephone: Terminus 7877.

Industrial and Planning Exhibition.

An Industrial and Planning Exhibition is being held in County Buildings, Cupar, Fife. The exhibition shows existing industries in Fife and samples of their manufactured products, together with evidence of the suitability of Fife for extension of industrial undertakings. It will continue until April 17.

Fuel Stores for Small Houses.

The provision of ample storage space for solid fuel in both new and existing houses is dealt with by the Coal Utilisation Joint Council's new publication, "Fuel Stores for Small Houses." The publication not only explains and justifies the need for larger fuel storage space but also includes a series of practical store designs illustrating methods by which the best use can be made of the limited space prescribed by the Ministry of Health for fuel storage in new houses. Typical house plans are given in the book, together with the appropriate fuel store for the particular heating installation. Copies of "Fuel Stores for Small Houses" may be obtained, price 2s., post free, from the Secretary of the Joint Council, 54, Victoria-street, London, S.W.1.

Save Those Bags!

The Minister of Works has asked that the following statement should reach the hands of manufacturers, distributors and users of powdered products distributed in paper bags: There is a serious world shortage of Kraft pulp from which paper bags are made. In addition, the utmost economy in all imports is essential. The salvage of used bags is vital. The mills can use much more than is coming in now. Without salvage, deliveries of products will be imperilled. The manufacturers and distributors are putting great efforts into the promotion of this campaign. But they can do nothing unless the men on the building jobs save the bags. It is up to every employer and every operative to play his part in helping the manufacturers and distributors to organise a steady flow of used bags back to the mills.

New Roofs for Cathedrals.

Following the example of Liverpool Cathedral, other and older cathedrals are to be given copper roofs, it was stated by Mr. E. Carr, B.Sc., A.M.I.Mech.E., A.M.I.P., Building Engineer to the Copper Development Association, in a lecture to the National Registration of Plumbers at the Central Technical College, Liverpool, on Monday, March 31. "Liverpool Cathedral," said Mr. Carr, "with more than 40,000 sq. ft. of copper roofing metal now installed, provides an outstanding modern example of copper roofing carried out in the 'traditional' style. It is an example by which some of the older cathedrals are to profit. Plans for replacing old roofs of other materials with copper roofing are now being discussed by the authorities responsible for several of our oldest cathedrals. Reroofing with copper has, of course, been carried out successfully within recent years at York Minster, Salisbury Cathedral, and other equally treasured buildings."

Fewer Forms for Builders.

Form-filling time has been reduced for builders by the introduction of a new Ministry of Works monthly return, which replaces two weekly and two monthly returns hitherto used for obtaining statistical information vital to the national building programme. As a result of this change, over 95 per cent. of the form-filling time taken by builders who had to make these returns will have been saved. Work will also be saved in the Government Departments which co-operated with the Ministry of Works in simplifying the system.

The new form, C.P.S. 23, is a simple one. One copy is required by the Ministry of Works each month. Only five questions need be answered: the number of men employed, increases and reductions in the labour force each month, value of work completed in the month, percentage of contract completed to date, contained in the small portion (Part II). The larger portion of the form (Part I) will already be completed by the Ministry of Works when the contractor receives it. One side only of the form has to be completed each month. Postage is official paid.

Food Crops Under Glass.

In a notice to growers of food crops under glass, the Ministry of Agriculture and Fisheries states: "If you have no building maintenance licence, or if your maintenance licence will not cover repairs (essential to avoid loss of food) of damage due to the recent snow, gales and floods, apply to the Ministry of Works Regional Office for a building licence. Your application form, properly completed, should be sent to your War Agricultural Executive Committee in the first instance. If you require glass for these essential repairs, apply to your War Agricultural Executive Committee for a certificate of urgent need, stating amounts and sizes required. Attach this certificate to your order for glass and make sure that your merchant or builder forwards the certificate when *he* orders glass from distributor or manufacturer. The certificate must accompany the order at all stages. If you need timber for these essential repairs, apply to your War Agricultural Executive Committee stating amount and kind required, and name and address of your supplier or builder. Your application for a civil building licence (if the work is not covered by a building maintenance licence) must accompany your application for timber."

Federation of Demolition Contractors.

The sixth annual general meeting of the National Federation of Demolition Contractors was held at the Holborn Restaurant, London, W.C.1, on Wednesday, March 26. Mr. C. S. Willment, of Messrs. Willment Bros., Ltd., was unanimously re-elected president for the seventh successive year, and Mr. A. G. Griffiths, of Messrs. Charles Griffiths, Ltd., was re-elected vice-president for his third year. The council were elected as follows: Messrs. H. Bramwell (Messrs. Bramwell and Gateley, Ltd.), J. H. Flack (Messrs. St. Mary's Demolition and Excavation Co., Ltd.), F. Hardwick and H. W. Norris (Messrs. Goodman Price, Ltd.), and L. R. Reece (Messrs. Lea Valley Demolition and Excavation Co., Ltd.). The chairmen of the regional organisations are, *ipso facto*, members of the council: Messrs. S. B. Allison (Messrs. Samuel B. Allison, Ltd.), Scottish Region; W. J. Balderstone (Dismantling and Engineering (Midlands), Ltd.), Midland Region and Wales; A. G. Foster (Messrs. H. Sabey and Co., Ltd.), London Region, and Eastern and Southern and South Eastern Region; J. J. Harrison (Messrs. M. Harrison and Co. (Leeds), Ltd.), Northern and North Eastern Region; T. Maiden (Messrs. Thomas Maiden and Son, Ltd.), North Western Region.

Cast Aluminium Windows at B.I.F.

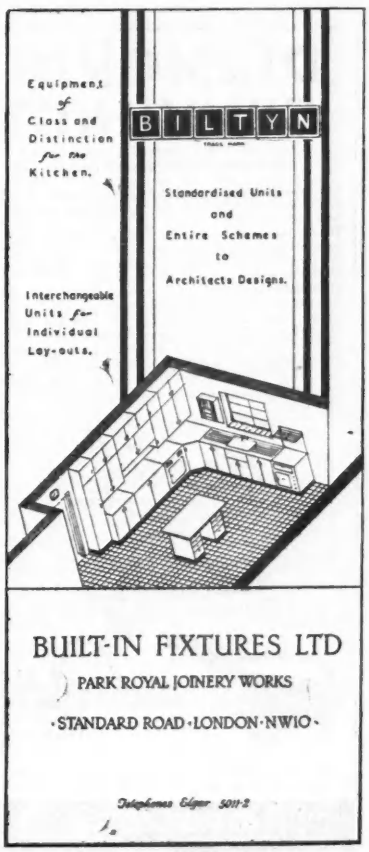
Due to the shortage of steel and the necessity of producing windows for the housing programme, one firm of exhibitors at the Birmingham Section of the British Industries Fair which opens on May 5 has been experimenting with cast aluminium. As a result, they state that they are now able to fulfil all demands for windows, with a delivery programme not exceeding 12 weeks.

Foire de Paris, 1947.

The thirty-sixth Paris Trade Fair, to be held from May 10 to 26, will be increased in area this year by some 25 acres, bringing the total area available to 125 acres. This constitutes the largest permanent exhibition grounds in the world. Messrs. Thos. Cook and Son, Ltd., of Berkeley-street, London, W.1, have undertaken to make the necessary travel and accommodation arrangements for visitors to the Fair, which will be open from 9 a.m. to 6 p.m. every day, Sunday included.

Clay Works Welfare Regulations.

In the light of the recently published report of the Committee on Amenities in the Brick Industry, under the chairmanship of Sir Wilfred Garrett, and of other inquiries, the Minister of Labour and National Service proposes to make new Special Regulations under the Factories Act, 1937, replacing the Clay Works Welfare Order, 1932, and applying to the factories to which that Order applies. A draft of the proposed regulations, entitled the Clay Works (Welfare) Special Regulations, has been published by H.M. Stationery Office, and copies of the draft (price 1d.) can be obtained from H.M. Stationery Office. Copies of the report of the Committee (price 3d.) can be similarly obtained.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B.S.S. for Coloured Pitch Mastic Flooring.

British Standard 1375 for coloured pitch mastic flooring has recently been published by the British Standards Institution. The issue of the specification is particularly important for the Government building programme in view of the present restriction on the use of timber in ground floor rooms. Copies can be obtained from the offices of the British Standards Institution, Sales Department, 24, Victoria-street, London, S.W.1, at a cost of 2s., post free.

Visual Education Pamphlets.

Messrs. B. T. Batsford, Ltd., 15, North Audley-street, W.1, have published the four following pamphlets for the Council for Visual Education: "The Future Citizen and His Surroundings," by W. F. Morris, B.A., price 6d.; "Art and Everyman," by Hervey Adams, R.B.A., N.S., price 1s.; "Architecture as a Communal Art," by Professor Sir Charles Reilly, O.B.E., M.A., LL.D., F.R.I.B.A., price 9d.; and "Visual Pleasures from Everyday Things," by Nikolaus Pevsner, price 9d.

German Technical Intelligence: Patents.

With reference to the publication by the British Intelligence Objectives Sub-Committee of Reports on German Industry, the Board of Trade wish to point out that although no invention made in Germany during the period between September 3, 1938, and December 31, 1945, can become the subject of a valid British patent, nevertheless, some of the information gathered in Germany may be covered by valid patents or patent applications in the United Kingdom. In order to avoid infringing patent rights, therefore, firms interested in exploiting any particular item are advised to investigate the patents position in the United Kingdom before going into production. Similar investigations are also desirable before exports are made to any particular country abroad.

THE SCOTTISH BUILDER

NEW BUILDINGS

Glasgow.—Alterations and additions proposed for the Darwin Paper Staining Co., Ltd., for which the architects are John Keppie & Henderson, 196, West Regent-st., Glasgow.—Alterations and additions proposed at Eglinton-st. for Menzies & Co., Ltd., for which the architects are A. & G. Gray, 115, West Nile-st., Glasgow.—School buildings proposed at Fauldham-st., for which the architect is Mr. John MacNab, 129, Bath-st., Glasgow.—Additions and alterations proposed for the Strathclyde Paint Co., Ltd., for which the architects are Burnet & Boston, 180, Hope-st., Glasgow.—Additions and alterations proposed for Waddell, Ltd., for which the architect is L. H. Ross, 223, West George-st., Glasgow.

Lanark.—35 blocks of houses proposed, for which the architect is Samuel MacColl, Albert-st., Motherwell.

Shotts.—Dining hall and kitchen, etc., proposed at Allerton Public School, for which the architect is William Watt, Albert-st., Motherwell.

FUTURE CONSTRUCTION

CONTRACTS OPEN

For some contracts still open but not included in this list, see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

APRIL 19.

†***Beds. E.C.**—Canteen at Cedars School, Leighton Buzzard. County A.

Welton R.D.C.—3 pairs of houses at Keep ham. F. L. Leach, S. Dep. £2 2s.

APRIL 21.

Barnes T.C.—8 flats at Trinity Church-rd. B.E. and S. Dep. £2

Berkhamsted U.D.C.—Construction of reinforced concrete footbridge. E. and S. Dep. £2 2s.

***Blackwell R.D.C.**—24 houses off Mansfield-rd., Hillstown, Derbys. Architect and Housing Superintendent, "Dale-close," 100, Chesterfield-rd., South, Mansfield. Dep. £2 2s.

†***Brighton E.C.**—Adaptations to top floor at Preston-rd. school. B.E. and S. Dep. £1 1s.

***Goole.**—Erection of motor bus garage for Enterprise and Silver Dawn Motors, Ltd. Buttrick and Buttrick (F. and A.), 43, Oswald-rd., Scunthorpe, Lincs. Dep. £2.

Hucknall U.D.C.—Contract No. 1: 74 houses at Ruffs Farm estate; Contract No. 2: roads, sewers, water mains and general site works. S. Dep. £2 2s.

APRIL 22.

Leominster T.C.—16 Airey houses at Gateway-la. Walter B. Bond, F.S.I., quantity surveyor, 3, Newhall-st., Birmingham 3. Dep. £2 2s.

Poole T.C.—50 houses at Bourne estate, Herbert-ave., Parkstone. B.E. and S. Dep. £2 2s.

APRIL 23.

Bebington T.C.—50 houses at Brackenwood. E. and S. Dep. £2 2s.

Bournemouth T.C.—Adaptation of Pelhams, Kinson, into child welfare clinic and maternity hostel. Boro' A. Dep. £2 2s.

Brackley R.D.C.—11 dwellings at Everley. G. Forsyth Lawson, 25a, High-st., Banbury. Dep. £2 2s.

Sunderland T.C.—Completion of crematorium at Bishopwearmouth Cemetery. B.E. Dep. £2 2s.

APRIL 25.

Bakewell.—14 Airey houses at Bradwell. S.

†***Banstead U.D.C.**—Conversion of No. 4, Buff House Parade, High-st., into County Branch Library. C. Dep. £1 1s.

Southend-on-Sea.—Rebuilding 7 houses at Leigh housing estate. B.E. Dep. £2.

APRIL 26.

***Bootle C.B.**—2 dwellings at junction of Mossla. and Johnston-ave. B.S.

***Ripley (Derbys) U.D.C.**—24 houses at Bullbridge estate. W. E. Clark, S. Dep. £2.

Weymouth and Melcombe Regis T.C.—Public conveniences at Upwey and Overcombe. Crickmay & Sons, 23, St. Thomas-st., Weymouth.

APRIL 28.

***Durham County Standing Joint Committee.**—Repairs and alterations at Stockton Police Station. C.

Kingsclere and Whitchurch R.D.C.—5 pairs of Airey rural houses, with outside works, at Headley. F. Henshaw, Chartered Architect, Westminster Bank-chbrs., Andover. Dep. £2 2s.

Kingston-upon-Hull T.C.—66 flats and one shop at Porter-st.-William-st. site. City A. Dep. £1 1s., payable to City Treas.

APRIL 30.

Dolgelley U.D.C.—(a) 12 houses; (b) roads and sewers at Arddfawr site. C. Dep. £2 2s.

Downpatrick U.D.C.—74 houses at various sites. Town S., Irish-st. Dep. £5 5s.

MAY 2.

***Salop Standing Joint Committee.**—2 pairs of police houses at Shrewsbury. C. Dep. £2 2s.

MAY 3.

***Belper U.D.C.**—8 houses at Bell Acre estate. A. Percy Taylor, A.I.A.S., M.Inst., R.A., 59, Chapel-st., Belper, Derbys. Dep. £2 2s.

***Salop C.C.**—Conversion of Petton Hall, Burlton, into Residential Special School. A. G. Chant, County A. Dep. £2 2s.

MAY 5.

Brentford and Chiswick T.C.—9 aged persons' dwellings and 16 houses at Church-walk, Brentford. B.E. and S. Dep. £5 5s.

***Brentford and Chiswick T.C.**—6 lock-up shops at Edensor-rd., Chiswick. B.E. and S. Dep. £2 2s.

Wandsworth B.C.—Rebuilding 34 houses on Furzedown estate, Streatham, S.W.16. Geo. Elkington & Son, Architects, Norfolk House, 7, Laurence Pountney Hill, London, E.C.4. Dep. £2 2s.

MAY 6.

***Mablethorpe and Sutton U.D.C.**—40 houses at Waterloo-rd. R. Vincent Lewis, C. Dep. £3 3s.

MAY 8.

†***West Sussex C.C.**—Canteen kitchen and dining-room at Northmundham school, nr. Chichester. F. E. Steele (F.), County A., Chichester.

MAY 9.

Liverpool T.C.—Additional nurses' accommodation at Mill-rd. City E. and S.

MAY 27.

***Bethnal Green B.C.**—60 flats at Usk-st (No. 1) site. Applications to B.E. and S. before May 5. Dep. £2 2s.

NO DATE.

†***Exeter.**—Reinforced concrete foundations, framework, excavations, etc., for Biological Building at University College of the South West. Registrar, Gandy-st., Exeter. Dep. £10 10s.

MISCELLANEOUS.

APRIL 21.

Brentford and Chiswick T.C.—Demolition of shelters. B.E. and S. Dep. £2 2s.

APRIL 22.

***Southport C.B.**—Demolition and removal of school shelters. Ed. Offices, 1, Eastbank-st.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

APRIL 21.

Tenterden T.C.—B.S. (Materials.)

APRIL 26.

***Chertsey U.D.C.**—Electrical installations in 88 houses. E. and S.

APRIL 28.

***Brighton E.C.**—Installation of hot water heating system at St. Luke's Terrace school B.E. and S. Dep. £1 1s.

MAY 14.

Salford T.C.—Heating installation at Nurses' Home, Hope Hospital. City E. Dep. £5 5s.

ROADS, SEWERAGE AND WATER WORKS

APRIL 19.

Hornsea U.D.C.—Surface dressing. E. and S

APRIL 21.

Blaby R.D.C.—Roads and sewers at 4 sites. F. W. James (L.), Council Offices, Narborough, nr. Leicester. Dep. £2 2s.

King's Lynn T.C.—1,300 yds. of 9-in. sewer at Wootton-rd. B.E. Dep. £2 2s.

APRIL 22.

Carlisle T.C.—Surface dressing. City E.

†**New Romney T.C.**—Works of sewerage at housing site. D. Balfour & Sons, Consulting Engineers, 131, Victoria-st., Westminster, S.W.1. Dep. £3.

Wellingborough R.D.C.—Ecton water supply. Contract No. 1: Laying and jointing approx. 3,000 yds. of 3-in. and 4-in. iron water main; Contract No. 2: Supply and delivery of approx. 3,000 yds. of 3-in. and 4-in. iron water main; Contract No. 3: Erection of reinforced concrete water tower. Pick, Everard, Keay and Gimson, 6, Millstone-la., Leicester. Dep. £2 2s.

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The 6in. dia. Diamond Head will grind dead flat from an axed or rough-sawn granite surface at the rate of 1 sq. ft. in 2 minutes. Tests have proved that wear on the Head is negligible after grinding 2,000 super feet.
Superfine finish is obtained by following up with a fine carborundum cup grinding wheel fitted to the same handpiece. Final polishing is carried out with a felt pad fitted to type D.6 Handpiece, interchangeable with type RD/WF. For high speed cutting of hard stones, type B, 3B Handpiece is available, fitted with 6in. Diamond-impregnated Cutting Tool and adjustable side gauge.

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Type RD/WF Handpiece with 6in. Diamond Head.

Type D.6 Handpiece for honing and polishing.

FLEXTOL ENGINEERING COMPANY LIMITED
THE GREEN, EALING, LONDON, W.5

West Hartlepool C.B.—Surface dressing of roads. B.E. Dep. £5.

†**Wycombe R.D.C.**—Surface water drainage and sewage disposal works at Bourne End. D. Balfour and Sons, 131, Victoria-st., S.W.1. Dep. £5.

†**Wycombe R.D.C.**—Roads at Bourne End, Brocklehurst and Cooper, Crendon-st., High Wycombe. Dep. £2.

APRIL 23.

Carlisle T.C.—Formation of Northumberland-rd. City E. Dep. £2 2s.

APRIL 24.

Minehead U.D.C.—Roads and sewers at 2 estates. E. and S. Dep. £3 3s.

Whiston R.D.C.—Roads and sewers at Bold housing site. E. and S.

APRIL 25.

Scunthorpe T.C.—Roads and sewers at Lincoln-gdns. site. B.E. Dep. £3 3s.

Wolverhampton C.B.—Main stormwater outfall sewers and ancillary works at Willenhall-rd. (north) site. B.E. Dep. £2 2s.

Wolverhampton C.B.—Roadworks at Scotlands estate. B.E. Dep. £2 2s.

APRIL 26.

Alfreton U.D.C.—Roads and sewers at 2 sites. H. Taylor, Consulting Architect, Regal-chbrs., Cavendish-st., Chesterfield. Dep. £3 3s.

Havant and Waterloo U.D.C.—Roads and sewers at The Gardens, Emsworth, site 3a. E. and S. Dep. £2 2s.

***Ripley (Derbys.) U.D.C.**—Roads and sewers at Bullbridge estate. S. Dep. £2.

APRIL 28.

Sutton-in-Ashfield U.D.C.—Roads and sewers at Green's Fields (Skegby) scheme. Warner & Dean, Housing Architects, Mansfield-rd., Sutton-in-Ashfield. Dep. £2 2s.

APRIL 29.

Kidwelly T.C.—Roads and sewers at Hillfield site. J. E. Vaughan Evans, Boro' Offices. Dep. £3 3s.

APRIL 30.

Longridge U.D.C.—Roads and sewers at St. Paul's site. C. Dep. £1.

Malmesbury R.D.C.—Laying 3,800 lin. yds. of 6 in. dia. cast-iron water main and 2,000 lin. yds. of 3 in. dia. cast-iron water main. Ross, Hooper & Harvey, 38, Market-pl., Chippenham, Wilts. Dep. £1.

MAY 1.

Whiston R.D.C.—Construction of sewerage and sewage disposal works. Rainhill, Husband & Co., Consulting E., 388, Glossop-rd., Sheffield, 10. Dep. £15 15s.

MAY 3.

***Huntingdon R.D.C.**—Site works at Upwood. Parkinson & Doe (L. and A.), Montagu House, Huntingdon. Dep. £2 2s.

MAY 5.

Billericay U.D.C.—Construction of soil sewers at Pitsea (scheme 1). S. Dep. £2 2s.

Ely R.D.C.—Construction, completion and maintenance of about 4,500 yds. of 9-in. and about 820 yds. of 12 in. dia. salt-glazed ware pipe sewers, house connection, manholes, pumping station, approx. 745 lin. yds. of 6 in. dia. cast-iron rising main and sewage disposal works, etc., at Littleport. C. Dep. £5.

MAY 9.

Towcester R.D.C.—Laying approx. 6,700 yds. of 12-in., 9-in., and 6-in. stoneware and cast-iron sewers, etc., at Silverstone. Pick, Everard, Keay and Gimson, 6, Millstone-la., Leicester. Dep. £2 2s.

MAY 12.

***Chester T.C.**—Foundations, drainage, sewerage and roadworks at proposed County Secondary Modern School, Handbridge. City E. and S.

MAY 17.

Chapel-en-le-Frith R.D.C.—Laying of water mains and fittings and construction of pumphouse and service tank. Brady & Partington, Market-st., Chapel-en-le-Frith. Dep. £5.

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the advertisement pages of this and previous issues.

GENERAL BUILDING WORK (LONDON)

Beckenham.—OLD PEOPLE'S DWELLINGS.—Sketch plans for four bungalows for the aged, to be erected at the corner of Churchfields and Sewards-roads, have been approved by the Housing Committee.

Edmonton.—CINEMA.—The Corporation have passed plans for the erection of a cinema in the Cambridge-road.

Eltham.—HOSPITAL EXTENSION.—Eltham and Mottingham Hospital is to be extended by the

erection of a building at the rear of the main block. Cost will be not less than £4,000.

Lewisham.—FLATS.—28 flats are to be built on the Sunderland-road site by the B.C.

Soho. — RESIDENTIAL CLUB. — Mr. Thomas Braddock, M.P., F.R.I.B.A., is architect for a residential club to be built on the site of the old Royalty Theatre, Dean-street. Estimated cost approximately £200,000.

Sydenham.—FLATS.—Lewisham B.C. propose to acquire four small sites aggregating about 3½ acres, on both sides of Kent House-road, Sydenham, for blocks of flats.

(PROVINCIAL)

Ashton-under-Lyne.—Lancs E.C. propose Technical school.

Bardsey.—West Riding E.C. propose County Primary school for junior and infants at Woodacre-la.

Blackburn.—E.C. propose canteens at Blakey Moor Girls', Cedar-st., and Moss-st. schools.

Bolton.—E.C. propose adapting old Central Lending Library for civic restaurant at £6,975.—C. of E. Authorities propose school for St. Matthew's Church.—T.C. approved :—Extensions to works at Manchester-rd., for Pilot Works, Ltd.; extensions to works at Manor-st., for H. Rigby & Co., Ltd.; additions at Weymouth Mills, Weymouth-st., for Greenhalgh & Shaw, Ltd.

Brighouse.—T.C. approved extensions at Victoria Mill, Calder-st., for D. R. Plews, Ltd.; extensions at Woodvale Mills, for Ormerod Bros., Ltd.

Bury.—Lancs C.C. propose pathological laboratory at County Hospital.—T.C. approved :—50 bungalows and flats at Thrush-dr. and Kestrel-ave., for Housing Committee; additions to works at Back-Webb-st., for Jos. Webb & Sons, Ltd.; additions to works at Groves-st., for Excelsior Fibre Co., Ltd.

Chesterfield.—R.D.C. propose developing sites for housing estates at Sheffield-rd., Killamarsh, Main-rd., Owler Bar-Woodhouse, Holmesfield and Ducksett-la., Eckington.—Board of Management of Royal Hospital propose adapting Abercrombie Nursing Home for paying patients' block.

Corby.—Northants E.C. to proceed with erection of county boys' secondary modern school.

Donnington.—Shropshire E.C. propose County Primary Junior and Infants' school for 240.

Garstang.—Lancs E.C. propose two secondary modern schools.

Hagley.—Folkes & Folkes (F.), 34, Hagley-rd., Stourbridge, are architects for community hall for P.C.

Heywood.—T.C. approved :—Additions at Doris Mill, Bury New-rd., for Doris Mill Co., Ltd.; 68 houses at Yew Mill and Peel Mill sites, for Housing Committee.

Keighley.—T.C. approved plans for warehouse and trade premises at Victoria Park Mills, for Victoria Park Mills, Ltd., and hostel at Woodworth House, for R. Clough & Co., Ltd.

Lancaster.—E.C. propose Technical College at £1,804,420.

Lichfield.—T.C. propose development of land at Wheel-la. for 500 houses, shops, school, etc.

Manchester.—Exors. of C. Broomhall propose rebuilding engineering works at Grosvenor-st.; Manchester and District Trustee Savings Bank, Booth-st., propose branch bank at Trafford Park. —T.C. propose crematorium and cemetery at North Manchester at £200,000.—T.C. approved :—Factory at Lord-st. and Stocks-st., Cheetham, for A. Cassel & Sons, Ltd., 300, Great Cheetham-st., for distribution depot at Cheetwood-rd. and Broughton-st., Cheetham Domestos, Ltd.; estate layout at Broad Oak-rd. and la., East Didsbury, for Storey & Stead, 31, King-st. West; dining-room and kitchen at North Manchester High school, Moston, for E.C.

Newcastle (Staffs).—T.C. approved Youth Club at May Bank, Wolstanton, for Staffs E.C.

Oldham.—T.C. propose :—Crematorium and Garden of Remembrance; canteen at St. Anne's R.C. Voluntary School, for managers.—T.C. approved :—Day nursery, for Central Mill Co., Ltd.; additions at Mumps Mills, Coronation-st., for Clegg Bros., Ltd.; works extensions at Featherstall-rd. North, for Condor Ironworks, Ltd.

Port Talbot.—T.C. propose satellite town at Penybryn.

Rochdale.—T.C. approved :—Additions at Pavilion cinema, Bury-rd., for Pavilion (Rochdale), Ltd.; additions at Sparth Mill, Corporation-rd., for Combined Egyptian Mills, Ltd.

Salford.—T.C. propose central bus station at New Bailey-st., Worsley-st. and Quay-st.

Sheffield.—T.C. propose shopping site at Wolf-rd., Parson Cross estate, also 750 additional houses.

Stockport.—M. B. Bennett, Brooklyn-rd., Mile End, proposes showroom, garage, workshop and house at Macclesfield-rd., Hazel Grove.

Stockton Heath.—Cheshire E.C. propose two County Secondary Modern schools at Stockton-la.

Stoke-on-Trent.—Housing Committee recommend City Council to erect 198 houses at Springfields site, Trent Vale.

Stretford.—T.C. approved 140 houses, 48 flats and 22 garages at Moss Park-rd. estate.

Sunderland.—Corporation Health Committee propose following during next three years:—£100,000 maternity block; £22,000 physio-therapy block; £5,000 ambulance dept.; £50,000 abattoir; and £30,000 for health centres. J. E. Lewis, is B.E.

Tynemouth.—B.E. to prepare layout plans for 250 houses at Kennersdene Farm site for T.C.

Walsall.—U. W. Shipley (Jeffries & Shipley), Kingscourt, Bridge-st., is architect for hotel at Barns-la., Rushall, for Ansell's Brewery, Ltd., Aston Brewery, Birmingham, 6.

Warrington.—T.C. approved alterations to works at Tanners-la. for H. & D. Wright Bros.

Whitley Bay.—Plans prepared by Northumberland County A. for primary school at Seatonville estate.

TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Aberystwyth.—10 flats at St. John's site, Queen's-rd. J. B. McGaw, A.M.Inst.C.E., B.S. Quantities by Chapple & Son, Cardiff :—*E. T. Davies & Son, Felindre Mill, Aberarth, Cardiganshire, £10,987.

Bangor (North Wales).—7 houses, Coed Mawr estate, for T.C. C. Richards, B.Sc., City Surveyor :—*Ellis Jones & Son, Glynteg, Penlon, Bangor, £8,716.

Barnard Castle.—Additions to penicillin factory for Glaxo Laboratories, Ltd., Architects, Elliott, Cox & Partners, Coastal-chbrs., 172, Buckingham Palace-rd., London, S.W.1 :—*Taylor Woodrow Construction, Ltd., Southall, Middlesex.

Blackwell.—18 houses at Wilson-ave., for R.D.C. :—*H. Ashley & Son, Ltd., Church Hill, Mansfield Woodhouse.

Boldon.—16 houses at Somerset estate, for U.D.C. :—*G. Durham & Co., East Boldon.

Bolton.—Works, for T.C. C. Herbert, B.E. :—Conversion of Watermillock into hostel for aged persons : *Ainscough & Lowe; *Ashton & Osborn, 102, Mornington-rd., cost £4,624; 358 "Orlit" houses at Lever Edge-la. estate: *William Townson & Sons, Ltd., Park Hill-st., £438,908. (All of Bolton.)

Bradford.—56 houses at Eccleshill and Clayton sites, for T.C. J. T. Castle (A.), City A. :—*H. Hudson, Hollingswood Mount, Lidget Green, £32,500 (26); *L. Sykes, 19, Infirmary-st., £38,236 (30). (Both of Bradford.)

Bromsgrove.—Houses at Melbourne-ave., for U.D.C. F. W. Goodman, S. :—*Bowes Building Co., Ltd., Kidderminster-rd., Whitford-vale, Bromsgrove.

Caterham and Warlingham.—22 houses at Macauley-rd., Caterham, for U.D.C. L. V. Gordon, B.Sc.Eng., E. and S. :—*Woodcock, Marshall & Co., Ltd., 39, Great Windmill-st., London, W.C., £30,460.

Derby.—5 pairs of houses, for T.C. :—*Ford & Weston, Ltd., £11,320.

Deudraeth.—12 houses at Llanfrothen, 14 at Llandecwyn, and 22 at Trawsfynydd, for R.D.C. M. Jones, S. :—*W. H. Roberts (Builders, Contractors), Ltd., 50-54, King-st., Wallasey, Ches.

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Dudley.—Works, for T.C. F. H. Gibbons, B.S. :—Dining-room and kitchen at Rosland school: *Jack Wistance, Leicester-bldgs., Bridge-st., Walsall; 52 houses at Tansley-hill: *William Lindley, Ltd., Flood-st., Dudley, £58,240.

Eastbourne.—(a) 10 houses at Victoria-dr.; (b) 12 houses at junction of Churchdale-rd. and Southborne-rd.; (c) 4 houses at junction of Churchdale-rd. and Southborne-rd., for C.B. B.E. :—(a) *Y. J. Lovell & Son, Ltd., Eastbourne; (b) and (c) *W. Llewellyn & Son, Ltd., Eastbourne.

Ellesmere Port.—70 additional houses at Stanney estate, for U.D.C. C. N. Davies, S. :—*Thomas Warrington & Sons, Ltd., 82, Station-rd., Ellesmere Port, Ches.

Formby.—22 houses at No. 1 site, Church-rd., for U.D.C. E. and S. :—*R. & J. Barton, Ltd., 666a, Liverpool-rd., Ainsdale, Southport, £24,508.

Gt. Yarmouth.—Biological laboratory at Yarmouth Girls' High School, for Governors of Grammar School Foundation :—*Daniel & Mace, Ltd., Brundall.

Hanley.—Factory for Disabled Persons' Association :—*G. & J. Seddon, Ltd., 55, Duke-st., Fenton, Stoke-on-Trent.

Hereford.—Conversion of brickworks camp into dwelling accommodation, for City Council :—*Frank B. May, Kington, Herefordshire, £8,541.

Hull.—Houses, for City Council :—20 at Grammar School-rd.: *Robinson & Sawden, Ltd., Hull, £32,000; 84 at Priory-rd. West: *Peter Larvin & Co., Ltd., 60, Russell-st., Hull, £130,200 (subject to M.H. approval).

Keighley.—26 bungalows at Bracken Bank estate, for T.C. :—*E. Turner, Ltd., Bradford-st., Keighley, £22,479.

Leyton.—Canteen at Walbrook Works, Norlington-rd. H. G. Needham, M.I.R.A., architect, Earlham-gr., E.7. *W. J. Jerram, Ltd., £3,480.

L.C.C.—Contract exceeding £2,500 in value placed by L.C.C. during period ended April 2 :—Provision and erection of 50 Scott Wood houses at two sites at St. Helier estate, Morden: The British Power Boat Co., Hythe, nr. Southampton.

London (Air Ministry).—Contracts to value of £500 or over for week ended April 5 :—*Painting work* : Wm. Winstanley & Co., Ltd., Warrington, Lancs. *Demolition work* : Haymills (Contractors), Ltd., London, W.5.

¶London (M.O.W.).—Contracts placed by M.O.W. for week ended April 3 :—*Carmarthenshire:* Llanelly, Stradey Park Central school, temporary school buildings, Hy. Thomas & Co., Ltd., Pottery-rd. Saw Mills, Llanelly. *Cornwall:* Wadebridge R.D.C., sewers and site works for Aluminium houses, M. T. Sleeman & Sons, Longbrook-terr., Exeter. *Essex:* Walthamstow B.C.7, foundations and site works for Aluminium houses, A. O. Laird, Buckingham-st., Strand, W.C.2. West Ham, Denmark-st. school, kitchen and dining-room, H. Darby & Son (Leyton), Ltd., 71, Lea Bridge-rd., E.15. *Hampshire:* Southampton C.B.17, Arcon houses, W. T. Nicholls (Southern), Ltd., Tennyson-rd., Southampton. Aldershot, Ash Vale County Primary school, temporary school buildings, Marden Ball & Co., Ltd., Wagon Yard Joinery Works, Farnham, Surrey. *Kent:* Gillingham B.C.3, foundations and site works, Aluminium houses, F. Parham, Ltd., 1a, Eva-rd., Gillingham. Chatham, Ordnance-st. County school, Highfield site, temporary school buildings, G. E. Wallis & Sons, Ltd., Broadmead Works, Maidstone. *Lanarkshire:* Coatbridge, site works and Tarran houses, Modern Homes (Edin.), Ltd., 4, Melville-cres., Edinburgh.

Lancs: Dalton-in-Furness, Dowdales Modern school, hutted accommodation, C. Townson, Ladycroft, Myrtle-terr., Dalton-in-Furness. Maghull, Liverpool, cottages at Moss-side Institution, Wm. Moss & Sons, Roscoe-st., Liverpool, 1. *Middx:* Stanmore T.O.B., patent flat roof and floor, Helical Bar & Engineering Co., Ltd., 82, Victoria-st., S.W.1. Northwood Hills T.O.B., patent flat roof and floor, Flooring Contracts (London), Ltd., 11, Grosvenor-pl., S.W.1. Canons Park T.O.B., patent flat roof and floor, Helical Bar & Engineering Co., Ltd., 82, Victoria-st., S.W.1. *Oxfordshire:* Radcliffe Infirmary, Oxford, animal house, Benfield & Loxley (Oxford), Ltd., 106, Bullingdon-rd., Oxford. *Staffs:* Newcastle-under-Lyme, foundations and site works for Aluminium houses, C. Cornes & Son., Lichfield-st., Hanley. *Yorks:* Barnsley D.P.E.C. factory, Vernon Dunk, Ltd., Summer-la., Barnsley. Castleford, Airedale infants' school, Frysten-rd., dining-room and kitchen, A. Gregory & Son, Ltd., Manor Works, Glasshoughton, Castleford. Doncaster, Armthorpe infants' school, dining-room and scullery, Pearson & Blackwell (Doncaster), Ltd., Carr Grange Works, Hyde Park, Doncaster. Doncaster R.D.C.2, foundations and site works for Aluminium Houses, John Holmes (Builders), Ltd., 54, Queen's-rd., Doncaster.

London (War Dept.).—Works contract placed by War Dept. for week ended March 22 :—*Essex* : Miscellaneous work, S. Cronin & Sons, Ltd., Brentwood. *Kent* : Painting work, Geo. Jones & Son, London, W.8.

Midhurst (Sussex).—New wing at King Edward VII Sanatorium :—*Crosby & Co., Ltd., Lion Works, Farnham, Surrey.

Newcastle-on-Tyne.—Alterations to offices, etc., at 2, Eldon-sq. Architects: Fennell & Co.,

Bridge End-chbrs., Chester-le-Street, Co. Durham:—*John Jackson & Sons, Corporation-st., Newcastle-on-Tyne.

Newcastle-on-Tyne.—Works for City Council:—12 houses at Netherby-dr., Blackett-Ord estate: *C. S. Hogg (Builders), Ltd., 259-261, Two Ball Lonnen, Newcastle, £13,608; 12 bungalows at Rudchester-pl.: *A. Reynolds & Co., 8, Cottenham-st., Newcastle, £11,148.

Rotherham.—Completion of Newman open-air special school, for E.C. E. J. Manson, B.E.:—*Beeden, Ltd., Thrybergh, nr. Rotherham, £2,500.

Seaham.—104 houses, for U.D.C.:—*W. G. Tomlin, Marlborough-st., Seaham, Co. Durham. (Cost £126,720.)

Sheffield.—Works for City Council:—Construction of Hadfield Reservoir: *Geo. Longden & Son, Ltd., Sheffield, £75,253; reinstatement of damaged section of Abbeydale Grammar School: *W. Matthews, Derbyshire-la., Sheffield, 8, £3,300; cloakrooms, stockrooms and staff room at Fox Hill County School: *S. Denton & Co., 126, Bannerdale-rd., Sheffield, 7.

Shore.—15 pairs of houses, for Shore Housing Association, Ltd., Shore Mills, Littleborough. Ernest A. Newton, Leach & Booker, Chartered Architects, 28, Kennedy-st., Manchester, 2:—*E. Taylor & Co., Ltd., Littleborough, £34,860. Roads and sewers, £6,190.

Skipton.—Houses, for R.D.C. T. Yeadon, S.:—6 at Bradley: *Merritt & Fryers, Sackville-st., Skipton, £7,331; 14 at Wheatlands-la., Glusburn: *Walter Smith, 3, Gilstead-dr., Bingley, Yorks, £17,823.

Smethwick.—Extensions at Beehive Foundry, Brewery-st., for Samuel Smith & Sons, Ltd. J. A. Harper & Son, 63, Temple-row, Birmingham, 2, Architects:—*W. J. Whittall & Sons, Ltd., 131, Lancaster-st., Birmingham, 14.

Stoke-on-Trent.—Houses, for City Council:—74 (Group No. 3) at Townsend Bucknall No. 2 site: *Public Works Dept., £87,482; 24 (Group 5) at Townsend Bucknall No. 2 site: *Sambrook Bros., Ltd., Burslem, £27,358; 26 (Group 14) at Chell Heath, Tunstall, site: *Public Works Dept., £34,951; 42 (Group 15) same estate: *Sambrook Bros., Ltd., £50,130; 160 (Group 15) same estate: *Public Works Dept., £210,975.

Tynemouth.—Further 122 "Orlit" houses at West Chirton "B" site, for T.C.:—*Tarslag, Ltd., Bowesfield-la., Stockton-on-Tees.

Tynemouth.—38 houses at New Work, for T.C.:—*Direct labour.

Upholland.—34 houses (section No. 2) and 46 houses (section No. 3) and 10 bungalows for aged persons at Highgate Farm housing estate, Hall Green, for U.D.C. Gornall & Wainwright (LL.), Architects, Britannia House, 8, Hardshaw-st., St. Helens:—*J. Jones & Sons (Woolton), Ltd., Higher-rd., Hunts Cross, Woolton, Liverpool, £93,900.

Wainford.—4 Swedish houses at Barsham, for R.D.C.:—*J. Moore & Sons, £3,554.

Welshpool.—40 houses, for T.C.:—*W. S. Brocklebank, Ltd., Woodchurch-rd., Birkenhead, £46,549.

Weymouth and Melcombe Regis.—Rebuilding 7 houses at Bradford-rd., for T.C. B.E. and S.:—*B. Bryant, 57, Monmouth-ave., Weymouth.

Wolverhampton.—Extensions to bus garage, Bilston, for T.C. W. M. Law, M.B.E., B.E.:—*McKeand, Smith & Co., Ltd., Showell-rd., Bushbury, Wolverhampton, £18,000.

Wolverhampton.—Factory at Bushbury for Goodyear Tyre & Rubber Co. (Great Britain), Ltd.:—*McKeand, Smith & Co., Ltd., Showell-rd., Bushbury, Wolverhampton.

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